

**FINAL REPORT**

# **NAVIGATING GLOBAL REGULATORY TRENDS: ENHANCE TRACEABILITY IN DELL'S SUPPLY CHAIN**



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## II. Abstract

Product and component-level traceability is rapidly becoming a critical requirement for companies due to evolving regulatory landscapes and growing stakeholder expectations for sustainability and ethical sourcing. However, tracking every product and component remains a significant challenge in the complex hardware supply chain. This report aims to address this challenge by evaluating the shifting regulatory environment, identifying emerging trends in traceability reporting and due diligence, and recommending strategies to strengthen Dell's supply chain performance and compliance.

The technology hardware sector is undergoing a shift as traceability moves from a niche concern to a core business priority. Regulatory bodies in the United States, the European Union, and China are enacting stricter policies on critical components and raw materials. At the same time, there is a growing emphasis on standardized traceability frameworks to improve transparency. As companies navigate these evolving requirements, developing robust tracking systems and adopting best practices for reporting and due diligence have become essential for ensuring compliance and maintaining stakeholder trust.

To help Dell navigate these growing compliance demands and proactively align its traceability efforts accordingly, this report analyzes key regulations impacting supply chain traceability, assess future regulatory trends, and examine industry best practices for compliance and risk management. By providing a comprehensive understanding of relevant regulations, this report aims to support Dell in mitigating compliance risks, enhancing operational efficiency, and reinforcing its leadership in ethical and responsible sourcing.

### III. Executive Summary

The regulatory environment surrounding global supply chains is becoming increasingly unpredictable, with growing concerns about human rights, cybersecurity, sustainability, and trade conflicts. For technology companies like Dell, it is critical to monitor and respond to evolving regulations in order to maintain efficient, compliant operations and avoid the risk of losing market access. Without effective supply chain management that aligns with jurisdiction-specific regulations, companies risk falling behind competitors or being forced to exit key markets.

To address these challenges, strengthening product- and component-level traceability has become essential. Demonstrating responsible sourcing from a human rights, sustainability, and cybersecurity perspective, as well as avoiding operations in high-tariff regions, requires sophisticated, regionally tailored strategies. Recognizing this, the project team conducted a comprehensive regulatory analysis across 11 priority jurisdictions, including the U.S., the European Union, China, and others, to evaluate emerging risks impacting Dell's supply chain and operations.

The team developed a regulatory assessment framework to systematically evaluate each regulation. This framework considered four critical dimensions: the regulation's current status, its severity in terms of operational and financial risks, the volatility of its enforcement over time, and whether the regulation applies before or after the final product assembly stage. Their analysis revealed how global supply chains are being reshaped by trends such as rising protectionism, regionalization, and intensified competition over critical materials. Trade tensions are increasing costs, triggering retaliatory policies, and disrupting established trade routes. In response, companies are accelerating diversification efforts through onshoring, nearshoring, and friendshoring strategies.

To explore how companies are adapting, the team examined the cases of Apple and IBM. Apple's strategy focuses on just-in-time manufacturing, deep supplier partnerships, and tight control over core technologies like A/M chips. Facing geopolitical risks, Apple has embraced a "China Plus One" approach, expanding production into India, Vietnam, and the U.S. IBM, on the other hand, has rebuilt its supply chain around AI, creating a "Cognitive Control Tower" that provides real-time visibility, automated risk detection, and decision support through natural language interaction.

Based on these findings, the team recommends Dell pursue three strategic actions: First, enhance supply chain resilience through geographic diversification, gradually transitioning from a "China Plus One", avoiding overreliance on any single country, to a "One Plus China" approach, expanding in countries like Mexico and Brazil with supportive regulatory environments. Second, conduct continuous geopolitical and regulatory risk analysis to navigate conflicting compliance obligations, such as differing ESG standards between the EU and the

U.S., as well as contrasting human rights policies between China and Western countries. Third, strengthen supplier monitoring and auditing practices by implementing stricter due diligence protocols, increasing audit frequency, and leveraging advanced technologies like blockchain and AI for real-time traceability. These efforts will allow Dell to maintain ethical sourcing, meet evolving environmental and cybersecurity standards, and respond flexibly to global uncertainties.

## IV. Introduction

### 1. Project scope and objectives

As a leading global tech firm with an extensive sales and manufacturing footprint and a supply chain across the globe, Dell is susceptible to the challenges and risks associated with emerging regulations, policies, and geopolitical tensions.

This project aims to help Dell proactively navigate these evolving requirements and enhance product and component-level traceability throughout its supply chain, particularly in its key regions of sales and manufacturing.

### 2. Importance of Traceability in Today's Supply Chains

In today's increasingly fragmented and regulated global economy, traceability has evolved from a supply chain best practice into a strategic imperative. For companies like Dell, operating across diverse jurisdictions with varying rules on environmental, labor, data, and trade compliance, the ability to trace the origin, composition, and movement of goods is foundational to meeting legal obligations and managing reputational risk. Traceability enables Dell to verify that its products are free from forced labor, contain ethically sourced critical minerals, and comply with emissions disclosure standards—all while strengthening internal accountability and external transparency.

As regulatory frameworks like the EU's Corporate Sustainability Due Diligence Directive (CSDDD), the U.S. Uyghur Forced Labor Prevention Act (UFLPA), and India's Mines and Minerals Amendment Act gain traction, governments are no longer accepting generic assurances of compliance. They now demand concrete, verifiable documentation that tracks raw materials from source to shelf. Without traceability systems, Dell risks enforcement penalties, market access restrictions, and supply disruptions, particularly as policies shift toward mandatory disclosures and import bans tied to sourcing conditions.

Beyond regulatory compliance, traceability unlocks long-term operational and strategic value. It allows Dell to improve supplier performance, assess ESG risk at the component level, and prepare for emerging standards such as digital product passports and AI accountability frameworks. Moreover, traceability is becoming a key enabler of resilient supply chain architectures—giving Dell the visibility needed to reroute operations, mitigate bottlenecks, and adapt in real time when geopolitical or environmental shocks arise. In this context, traceability is not merely a cost center, but a driver of supply chain innovation, stakeholder trust, and sustainable growth.



### 3. Overview of Global Challenges and Opportunities

As Dell expands its global footprint and adapts to a rapidly shifting regulatory environment, it is essential to understand the broader context in which today's supply chains operate. The global supply chain landscape in 2025 is defined by disruption, transformation, and strategic recalibration. Companies are increasingly challenged by geopolitical tensions, fragmented trade rules, technological disruption, and rising environmental and social governance (ESG) expectations. While these challenges are profound, they also present opportunities for companies that can act with agility, foresight, and resilience.

One of the most significant developments reshaping global trade in 2025 is the reemergence of protectionist policies. In April 2025, the U.S. implemented the so-called "Liberation Day" tariffs under Executive Order 14257, imposing a flat 10% duty on all imports and higher, retaliatory tariffs against countries with large trade surpluses—most notably China, which now faces a combined tariff rate of 145%. This aggressive trade stance marks a deepening of the strategic economic rivalry between the U.S. and China and has triggered swift retaliation, with China increasing tariffs on American goods to as high as 125%. For companies like Dell, these trade dynamics signal rising costs, potential supply disruptions, and the need to reevaluate regional sourcing and distribution strategies.

At the same time, countries like Mexico and India are leveraging these shifts to attract foreign direct investment through nearshoring and friendshoring initiatives. Mexico's 2025 Nearshoring Decree, for example, offers tax incentives and regulatory streamlining, making it an increasingly attractive base for North American supply chains. India, on the other hand, is scaling up critical minerals production, semiconductor assembly, and electronics manufacturing, aligning industrial policy with global corporate needs for diversification and supply security. Southeast Asian economies such as Vietnam, Malaysia, and Indonesia are also investing heavily in infrastructure and regulatory reform to capture displaced supply chain activities from China.

Simultaneously, global regulatory regimes are diverging in profound ways. The EU continues to lead on sustainability and traceability legislation, enforcing laws like the Corporate Sustainability Due Diligence Directive (CSDDD), the Ecodesign for Sustainable Products Regulation (ESPR), and new requirements around critical raw materials and battery circularity. In contrast, the U.S. is experiencing increasing fragmentation between federal and state ESG regulations, with states like California mandating climate-related disclosures while others, like Texas, push back against ESG-aligned investment. China has implemented strict data localization and cybersecurity rules while asserting greater control over critical mineral exports, further complicating compliance for multinationals operating across jurisdictions.

These policy contradictions and enforcement disparities mean that global supply chains must now be not only efficient, but also compliant with varying—and often conflicting—legal regimes. Regulatory divergence creates operational friction, legal uncertainty, and reputational risks for firms that do not adapt their governance and traceability systems accordingly. The result is a

business environment in which compliance is no longer simply about avoiding penalties; it is about securing market access, protecting brand equity, and maintaining stakeholder trust.

Compounding these regulatory challenges are broader structural forces such as climate change, digital transformation, and shifting consumer expectations. Physical disruptions from extreme weather events and geopolitical instability are increasingly common, while the digitalization of operations brings both efficiency and cybersecurity risk. Customers, investors, and regulators alike are demanding greater transparency into product origins, environmental impact, labor conditions, and ethical sourcing. The demand for traceability has never been greater.

Yet within these complexities lies a significant opportunity. Companies that invest in resilient, intelligent, and regionally adaptive supply chains will not only reduce risk but also unlock competitive advantage. The integration of AI-powered analytics, blockchain-enabled traceability, and real-time compliance tools offers unprecedented visibility and control. By aligning operational strategy with global regulatory trends, Dell can better navigate trade fragmentation, meet diverse compliance expectations, and position itself as a leader in ethical, sustainable, and secure supply chain management.

In this report, we explore how Dell can respond to these challenges and opportunities by strengthening traceability, reinforcing supplier governance, and enhancing regional resilience. The following sections detail key regulations, global trends, comparative case studies, and strategic recommendations that collectively aim to inform Dell's approach to building future-ready supply chains.

## **4. Methodology**

The research employed systematic, criterion-referenced methods in its evaluation of regulations in both the component and product levels of Dell Technologies' global supply chain. The method sought to identify risks, clarify requirements for compliance, and provide actionable recommendations applicable within Dell's business environment.

### **Regulation-Driven Research Design**

The SIPA team adopted an approach that comprised the analysis of every regulation separately, choosing policies based on principles of traceability, enforcement traction, and the materiality implications for Dell. Every regulation—whether sectoral (e.g., export controls) or cross-sectoral (e.g., ESG due diligence)—was considered separately to capture its unique framework and corresponding implications.

The research covered 11 jurisdictions of strategic importance to Dell's global operations: the EU, the U.S., China, United Kingdom, Mexico, Brazil, Japan, India, Thailand, the Philippines, and Malaysia. These regions were chosen based on the sales and manufacturing countries' list given

by Dell, and the SIPA team’s assessment of the regions’ regulatory maturity, supply chain integration, and exposure to traceability-related legal requirements.

The sources of data used included official government websites (i.e., MOFCOM, CBP, European Commission), legal texts, and international compliance regulatory bodies. These were cross-referenced with Dell and industry white papers to ensure both applicability and accuracy.

## Regulatory Evaluation Framework

To ensure consistent, comparable, and analytically rigorous assessments of traceability-related regulations across jurisdictions, this project employs a standardized evaluation framework. Each regulation is assessed according to four core criteria: Status, Severity, Enforcement Volatility, and Stage Classification. These definitions guide both individual regulatory analysis and cross-jurisdictional comparison.

### **Status**

Definition: Status refers to the regulatory lifecycle stage of a policy—whether it is under development, partially effective, or fully in force.

Category	Classification	Description
<b>Emerging Regulations</b>	<i>Draft</i>	The policy is still in development and has not been finalized or approved.
	<i>Passed</i>	The policy has been enacted but is not yet in effect for Dell.
	<i>Partially Effective</i>	The policy is in force, but only some provisions currently apply to Dell.
<b>Current Regulations</b>	<i>Effective</i>	The policy is officially approved and fully in effect for Dell.
	<i>Under Review</i>	The policy is undergoing evaluation for revision, sunset, or further clarity.

### **Severity**

Definition: Severity captures the potential consequence of non-compliance, based on four risk dimensions: financial penalty, operational impact, legal exposure, and reputational harm. A regulation may be classified as high severity if it significantly exceeds the threshold in any single dimension.

<b>Severity Level</b>	<b>Financial Penalty</b>	<b>Operational Impact</b>	<b>Legal Exposure</b>	<b>Reputational Risk</b>
<i>Low</i>	≤ \$500,000	Minor corrective actions; no license implications	Administrative warning only	No blacklist; low or limited visibility
<i>Medium</i>	\$500,001 – \$5 million	Temporary suspension of activities; compliance overhaul required	Sectoral bans or regulatory sanctions	Industry-specific blacklisting or public scrutiny
<i>High</i>	> \$5 million	Shutdowns, license revocation, or major disruptions	Criminal liability; risk of prosecution	Global reputational damage; UEL listing; procurement bans

### **Enforcement Volatility**

Definition: Enforcement volatility measures the level of predictability in regulatory enforcement and implementation.

<b>Volatility Level</b>	<b>Description</b>
<i>Low</i>	Stable, transparent enforcement with minimal discretion or change.
<i>Medium</i>	Generally consistent enforcement with occasional exceptions or amendments.
<i>High</i>	Unpredictable, politically discretionary, or frequently changing enforcement practices.

### **Stage Classification**

Definition: Stage classification identifies where in the supply chain a regulation applies.

<b>Stage</b>	<b>Description</b>
<i>Pre-Final Assembly</i>	Early and intermediate stages including raw material extraction, component production, and inbound logistics.
<i>Post-Final Assembly</i>	Final stages including product testing, packaging, outbound logistics, sales, and post-market obligations.

## Regulatory Organization

To streamline interpretation and facilitate client use, all regulations were first grouped by thematic category, such as:

- Critical Minerals & Supply Chain Security
- Forced Labor Prevention & Ethical Sourcing
- Tech Transfer & Investment Restrictions

To surface the most impactful and strategically urgent regulations within each thematic category, the SIPA team applied a structured prioritization framework based on three sequential criteria: Severity, Enforcement Volatility, and Time.

This ordering logic reflects Dell's need to focus first on high-severity regulations with stable enforcement environments. These are policies that not only pose the most serious consequences for non-compliance—such as significant financial penalties, reputational damage, or legal exposure—but are also less likely to change due to their codified status and consistent enforcement. High-severity, low-volatility regulations often have clearly defined implementation mechanisms and fewer ambiguities, making them both highly impactful and actionable for Dell's supply chain and operations teams.

Within each topic, regulations were ordered using the following tiered prioritization system:

1. Severity of non-compliance risks (High → Medium → Low)
2. Enforcement Volatility (Low → Medium → High)
3. Time (Most Recent → Oldest)

Priority Tier	Severity	Volatility	Time Sorting
1	High	Low	Most Recent → Oldest
2	High	Medium	Most Recent → Oldest
3	High	High	Most Recent → Oldest
4	Medium	Low	Most Recent → Oldest
5	Medium	Medium	Most Recent → Oldest
6	Medium	High	Most Recent → Oldest
7	Low	Low	Most Recent → Oldest
8	Low	Medium	Most Recent → Oldest
9	Low	High	Most Recent → Oldest

## **Regulatory Profile Structure**

Each regulation is presented through a standardized profile comprising:

- Regulation name
- Legal description of the regulation
- Scope (affected entities)
- Timeline (announcement and effective dates)
- Implications (compliance risks, operational demands, and other implications for Dell)
- Penalties (administrative, legal, reputational exposure)
- Evaluation Summary (status, severity, enforcement volatility, and stage classification)
  - In cases where the classification (e.g., “High Severity” or “Medium Volatility”) may not be self-evident from the regulatory text, the team includes brief justifications based on available penalty data, known enforcement patterns, or analogs from comparable regulations.

## V. Regulatory & Compliance Landscape

### 1. Key Drivers of Supply Chain Traceability

This section examines the primary forces driving Dell to strengthen supply chain traceability across international markets, with a particular focus on regulatory developments regarding ESG, regulatory enforcement and industry expectations. As global expectations around transparency and accountability grow, companies must stay ahead of evolving compliance requirements, which means enhanced traceability not only supports legal adherence but also reinforces brand trust and stakeholder confidence.

#### ESG pressures

Environmental, Social, and Governance (ESG) considerations have become a global focal point for responsible investment and corporate governance, particularly since the adoption of the Paris Agreement in 2015. However, the level of seriousness with which countries approach ESG differs significantly across regions.

The EU has emerged as a global leader in ESG regulation, establishing robust frameworks that have influenced policy developments in other jurisdictions. In the environmental domain in particular, the EU has implemented stringent legislation such as the Corporate Sustainability Reporting Directive (CSRD), the Corporate Sustainability Due Diligence Directive (CSDDD), and the EU Deforestation Regulation (EUDR)<sup>1</sup>. These regulations impose strict penalties for non-compliance, and violations can lead to severe reputational damage for companies.

In contrast, the U.S. has experienced political and ideological divisions that have hindered the advancement of comprehensive environmental policy. Recent attempts to institutionalize ESG accountability at the federal level have faced resistance, reflecting broader cultural and partisan divides. While some states, such as California, Colorado, and New York, have embraced ESG principles and introduced supporting legislation, they remain outnumbered by the 20 states, including Texas and Florida, that have enacted anti-ESG laws as of September 2023<sup>2</sup>. This fragmentation creates a complex regulatory landscape for investors and multinational corporations navigating the U.S. market.

Although the U.S. may lag behind the EU in environmental regulation, it takes a more aggressive stance on certain social issues. Notably, the Tariff Act of 1930 prohibits the importation of any goods made using forced labor, convict labor, or indentured labor. The Uyghur Forced Labor

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<sup>1</sup> Mariani, M, *There's a Hidden Divide to ESG Risk in the U.S. vs. the EU*, Z2Data, 2025, <https://www.z2data.com/insights/hidden-divide-to-esg-risk-in-the-us-vs-the-eu>

<sup>2</sup> Datafisher, *Comparing ESG Regulations Between the EU and the US*, 2024, <https://datafisher.com/news/esg-regulations-between-the-eu-and-the-us/>

Prevention Act (UFLPA) further strengthens this stance by banning imports tied to systematic forced labor in China's Xinjiang Uyghur Autonomous Region.

For Dell, it is essential to recognize regional variations in ESG regulations and proactively adapt its supply chain operations to remain compliant and competitive. This includes investing in flexible monitoring systems that can respond to diverse legal frameworks. By doing so, Dell can mitigate risks related to non-compliance, such as fines or reputational damage. Moreover, a robust traceability strategy positions the company as a responsible leader in global technology supply chains.

## **Regulatory enforcement and reputational risks**

As a global technology leader with a vast and complex supply chain, Dell is under growing pressure from regulators, investors, and consumers to guarantee transparency and ethical conduct throughout its sourcing and manufacturing processes. This scrutiny is particularly pronounced in the EU, where Dell faces escalating reputational risks due to stakeholders' increasing demands for transparency, ethical sourcing, and environmental responsibility. European consumers and institutional investors, with their strong focus on ESG standards, are quick to react negatively to any perceived failure by Dell to comply with EU regulations.

The EU Conflict Minerals Regulation, places Dell under indirect scrutiny due to its operations, partnerships, and customer base within Europe. The EU Conflict Minerals Regulation was established to confront the harmful impact of the trade in certain minerals, which has been linked to the financing of armed conflict, human rights violations, and weakened governance—particularly in vulnerable regions. In areas like the Democratic Republic of Congo (DRC) and other Conflict-Affected and High-Risk Areas (CAHRAs), armed groups have funded their operations through the unlawful extraction and sale of valuable resources, particularly tin, tantalum, tungsten, and gold (3TG).<sup>3</sup> This trade is frequently associated with child and forced labor, worker exploitation, and sexual violence, often leading to the displacement of local communities.<sup>4</sup> The regulation seeks to promote responsible sourcing practices among companies, ensuring that their supply chains do not inadvertently contribute to such abuses. Adhering to the EU regulation enhances Dell's ESG credentials, brand reputation among consumers and investors, and ensures continued market access within the EU.

In the U.S., Dell's reputation is increasingly vulnerable as consumers and investors actively scrutinize companies' environmental, social, and governance (ESG) practices. This heightened awareness demands transparency and ethical conduct, particularly from large technology corporations. Should Dell be seen as involved in labor violations, environmental damage, or

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<sup>3</sup> European Commission, *Conflict Minerals Regulation Explained*, [https://policy.trade.ec.europa.eu/development-and-sustainability/conflict-minerals-regulation/regulation-explained\\_en](https://policy.trade.ec.europa.eu/development-and-sustainability/conflict-minerals-regulation/regulation-explained_en)

<sup>4</sup> Cherepanova, Vera, "EU Conflict Minerals Regulation: What You Need to Know." NAVEX, April 7, 2021, <https://www.navex.com/en-us/blog/article/eu-conflict-minerals-regulation/>



poor supply chain management, it risks negative media coverage, decreased investor trust, erosion of customer loyalty and brand value, and greater pressure from advocacy groups and ESG-conscious shareholders. Given the evolving regulatory landscape, exemplified by California's legislation and ongoing federal discussions on supply chain due diligence, Dell's prominent position makes it particularly susceptible to significant repercussions from reputational failures in its home country.

In response to the 2008 global financial crisis, the 2010 Dodd-Frank Act brought sweeping changes to financial regulation, corporate accountability, and consumer protection. Notably, Section 1502 extended this reform into the realm of global supply chains by tackling the link between mineral sourcing and armed conflict in the Democratic Republic of Congo (DRC) and neighboring countries. This section established a cornerstone of corporate social responsibility in the U.S. by compelling companies to avoid inadvertently funding armed groups through their use of tin, tantalum, tungsten, and gold (3TG).<sup>5</sup> To achieve this, U.S. listed companies manufacturing products with these minerals must investigate their origin through a Reasonable Country of Origin Inquiry (RCOI).<sup>6</sup> If a connection to the DRC region is suspected, they must then implement due diligence measures, guided by international standards like the OECD, to ensure ethical sourcing and transparent supply chains.

As a company operating in California with significant global revenue, Dell is obligated under the California Transparency in Supply Chains Act (effective 2012) to publicly disclose its measures against slavery and human trafficking within its direct supply chains. This law mandates that retailers and manufacturers exceeding \$100 million in annual worldwide gross receipts report specific actions in five key areas: verification, audits, certification, internal accountability, and training.<sup>7</sup> For Dell, discrepancies between its reported efforts and actual practices could damage its reputation, erode consumer trust, and draw criticism from advocacy organizations. Given California's economic weight and active consumer base, Dell faces considerable scrutiny and public pressure in the U.S. market to uphold stringent ethical sourcing and labor standards.<sup>8</sup> Dell's challenges extend beyond legal compliance to significant reputational risks. Associations with human rights violations, environmental harm, or opaque supply chains can severely damage stakeholder trust and brand value. To effectively navigate this evolving landscape, Dell needs to go beyond minimum requirements by aligning with international standards, proactively engaging with its suppliers, and transparently demonstrating a strong commitment to responsible sourcing and corporate accountability. Ethical missteps in its supply chain could trigger negative media, NGO scrutiny, and investor activism, harming Dell's brand reputation

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<sup>5</sup> Source Intelligence, "What Is Section 1502 of the US Dodd-Frank Act?" *Source Intelligence Blog*, <https://blog.sourceintelligence.com/blog/what-is-section-1502-of-the-us-dodd-frank-act>

<sup>6</sup> U.S. Securities and Exchange Commission. "SEC Adopts Rule for Disclosing Use of Conflict Minerals." *Press Release*, August 22, 2012, <https://www.sec.gov/newsroom/press-releases/2012-2012-163>

<sup>7</sup> Pillsbury Winthrop Shaw Pittman LLP, "California Transparency in Supply Chains Act." *Pillsbury Law*, <https://www.pillsburylaw.com/en/services/california-transparency-in-supply-chains-act.html>

<sup>8</sup> California Department of Justice, "California Transparency in Supply Chains Act." *Office of the Attorney General*, <https://oag.ca.gov/SB657>

and customer loyalty. Moreover, failing to address growing sustainability expectations, such as circularity and carbon reduction, could put Dell at a competitive disadvantage.

## Industry and consumer expectations

In today's globalized economy, transparency and comprehensive disclosure are no longer optional but fundamental expectations for all industry players, including consumers. For a company with intricate global supply chains like Dell Technologies, openness regarding sourcing practices, labor conditions, environmental impacts, and regulatory adherence has evolved into a competitive necessity and a core ethical responsibility. Stakeholders and consumers alike expect Dell to provide clear, verifiable information about its products' origins and production processes, with a particular focus on labor standards and environmental sustainability. The growing demand from consumers and investors for assurances that Dell avoids contributing to exploitation or environmental harm, especially in high-risk regions, compels the company to adopt global disclosure standards such as the OECD Due Diligence Guidance, GRI, and SASB, alongside regular, data-driven progress reports like annual sustainability or ESG reports.<sup>9</sup> Dell is facing increasing scrutiny regarding its raw material sourcing and product manufacturing. Consumers, investors, and regulators expect proactive measures to prevent labor exploitation, human trafficking, and environmental harm in its operations and supply chain. Industry best practices now require adhering to international human rights standards like the UN Guiding Principles. Dell is expected to implement strong supplier codes, conduct regular third-party audits, assess and mitigate labor abuse risks especially in high-risk regions, and support traceability and transparency to address human rights violations.<sup>10</sup> Values-driven consumers increasingly demand assurance of fair labor practices and evidence of Dell's tangible actions, such as removing or remediating non-compliant suppliers.

To meet its commitment to ethical sourcing and transparency, Dell should adhere to regulations like the California Transparency in Supply Chains Act and the UK Modern Slavery Act by publicly outlining its strategies for tackling forced labor and human trafficking risks within its supply chain. Furthermore, under Section 1502 of the Dodd-Frank Act, Dell would conduct Reasonable Country of Origin Inquiries (RCOIs) and issue annual Conflict Minerals Reports, detailing its due diligence processes to prevent the sourcing of 3TG minerals from conflict-affected regions such as the DRC.<sup>11</sup> To bolster the credibility of its responsible sourcing initiatives, Dell will leverage third-party audits, such as those by the RBA, and utilize the RMAP to verify its supply chain practices. Moreover, Dell can ensure transparency by offering

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<sup>9</sup> Moody's Analytics, "Understanding Forced Labor: Key Insights and Solutions." Moody's Analytics, <https://www.moodys.com/web/en/us/kyc/resources/thought-leadership/forced-labor.html>

<sup>10</sup> Runyon, Natalie, "ESG Case Study: How Dell Technologies Prepares for EU CSRD as Part of Its ESG Strategy." Thomson Reuters Institute, December 14, 2023, <https://www.thomsonreuters.com/en-us/posts/esg/esg-case-study-dell-technologies/>

<sup>11</sup> EcoVadis, "Dodd-Frank Act: Section 1502." EcoVadis, <https://ecovadis.com/glossary/dodd-frank-act-section-1502/>

stakeholders real-time online access to information about its sustainability goals and ethical sourcing efforts.

Integrating ethical sourcing, human rights protections, robust transparency, and comprehensive disclosure throughout its operations and supply chain governance provides Dell with multiple advantages. It not only ensures compliance with evolving regulations but also fosters stronger consumer trust and enhances brand resilience in a market that increasingly values social responsibility. This proactive stance on ethical sourcing goes beyond simply satisfying consumer expectations; it solidifies Dell's reputation as a trustworthy and socially conscious leader in the corporate sphere, thereby increasing its attractiveness to ethically-minded consumers, investors, and other stakeholders who prioritize transparency and accountability in global supply chains.

## 2. Key Regulations by Region & Their Supply Chain Implications

### The European Union

Sustainability and human rights are high-priority topics in the EU, and related regulations have been actively enforced. In addition, the growing importance of digital platforms and cyber security, which are crucial for efficient supply chain management, has elevated their role in regulatory discussions. Trade policy has also gained increased attention, particularly following shifts under the Trump administration. From these perspectives, the following regulations have been selected for analysis based on their potential impact on Dell's operations in the EU. Due to the limited analysis available on recent regulations, these have been prioritized for review.

For the full regulatory analysis, please refer to [Appendix B. EU](#). This section outlines only long-term regulatory considerations, the key areas prioritized by the EU through its regulations, which are expected to be major long-term factors influencing Dell's supply chains.

#### **Sustainability Compliance**

There is growing global demand for more efficient and sustainable products to reduce energy and resource consumption. The EU's sustainable product policies, such as ecodesign legislation and energy labelling, serve as effective tools for improving the energy efficiency and environmental performance of products<sup>12</sup>. These measures help eliminate the lowest-performing products from the market while also supporting industrial competitiveness and innovation across the internal market. To advance the objectives of the European Green Deal, such as reducing resource consumption and minimizing environmental impact, the EU is developing a Sustainable Products Initiative. As part of this effort, the EU is actively working to phase out products with poor sustainability performance. This means that all products produced or sold in the EU must comply with technical standards for sustainability.

For example, the EU Deforestation Regulation (EUDR) is a major step toward global sustainability and aims to prevent deforestation linked to products sold in the European market. Under the EUDR, companies selling certain commodities must demonstrate that their products are not associated with deforestation and are fully compliant with legal requirements<sup>13</sup>. This includes providing detailed documentation and traceability data to track the product's journey from origin to final consumer.

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<sup>12</sup> European Commission, *Sustainable product policy & ecodesign*, [https://single-market-economy.ec.europa.eu/industry/sustainability/sustainable-product-policy-ecodesign\\_en](https://single-market-economy.ec.europa.eu/industry/sustainability/sustainable-product-policy-ecodesign_en).

<sup>13</sup> Acviss, *The Critical Role of Traceability in EUDR Compliance, 2024*, <https://blog.acviss.com/critical-role-of-traceability-in-eudr-compliance/#what-is-eudr>.

As a result, companies operating in the EU market must be better prepared and implement strict supply chain management practices to remain compliant and competitive. In this context, traceability plays a critical role—enabling businesses to meet EUDR requirements through transparent and reliable tracking of products throughout the supply chain.

To comply with these emerging sustainability regulations, Dell should enhance the traceability of materials used in its products, particularly raw materials that may be linked to environmental harm. Investing in data collection systems that monitor product sustainability performance from sourcing to end-of-life can help the company proactively meet EU standards.

(Key regulations in Appendix: Batteries Regulation, Corporate Sustainability Due Diligence Directive (CSDDD), Ecodesign for sustainable products regulation (ESPR))

### **Human Rights Due Diligence**

The EU is founded on a strong commitment to promoting and protecting human rights, democracy, and the rule of law—both within Member States and globally<sup>14</sup>. EU action and policy on human rights are structured around two main pillars:

- Protecting fundamental rights within the EU, in accordance with the founding Treaties and the EU Charter of Fundamental Rights
- Promoting human rights and democracy worldwide, particularly through its external relations with other countries, regions, and international organizations

Therefore, defending human rights through active partnerships with partner countries, international and regional organizations, and civil society groups is essential for companies operating in the EU market. Given that human rights clauses are now included in all trade and cooperation agreements with non-EU countries, robust traceability of components and products has become increasingly important.

To meet these expectations, Dell should implement human rights due diligence mechanisms, including mapping and assessing risks across the entire value chain, with special attention to high-risk geographies and vulnerable worker groups. The company should also establish early-warning systems and grievance mechanisms to detect and address potential violations. Enhanced transparency and documentation will not only ensure compliance with EU regulations, but also strengthen Dell's reputation as a responsible global business.

(key regulation in Appendix: Corporate Sustainability Due Diligence Directive (CSDDD))

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<sup>14</sup> European Union, *Human rights and democracy*, [https://european-union.europa.eu/priorities-and-actions/actions-topic/human-rights-and-democracy\\_en#:~:text=EU%20action%20and%20policy%20on,EU%20Charter%20of%20Fundamental%20Rights](https://european-union.europa.eu/priorities-and-actions/actions-topic/human-rights-and-democracy_en#:~:text=EU%20action%20and%20policy%20on,EU%20Charter%20of%20Fundamental%20Rights).

## **Trade Barriers**

EU vulnerabilities have become increasingly apparent. In addition to other major trading partners, the U.S. began imposing 20% tariffs on the EU starting April 2<sup>15</sup>. This political development adds further uncertainty to the EU's growth outlook, given the region's reliance on external demand.

In response to U.S. trade policy, the EU has announced that it is prepared to retaliate by targeting service exports, including those from Big Tech companies, if the U.S. enforces reciprocal tariffs on all imports<sup>16</sup>. The EU is in a position to hit U.S. service exports, where the U.S. runs a trade surplus. Possible measures include suspending certain intellectual property rights and excluding U.S. firms from public procurement contracts under the EU's enforcement regulation.

As a U.S.-based tech company, Dell must take these risks seriously. Potential EU tariffs could push the company to seek more affordable components in order to keep its products competitive. To mitigate potential trade disruptions, Dell should consider diversifying its supplier base within the EU or partner countries that maintain favorable trade terms with the region. Additionally, Dell could reassess the origin and routing of critical components to optimize tariff exposure.

(Key regulations in Appendix: The Anti-coercion instrument (ACI), "Buy european" procurement plan)

## **Semiconductors**

Global semiconductor shortages due to the COVID-19 pandemic forced factory closures in a range of sectors, from cars to healthcare devices<sup>17</sup>. This revealed that the world depended only on a limited number of semiconductor producers in a complex geopolitical context. Additionally, according to the Chips Survey conducted by the European Commission, industry in the EU expects demand for chips to double by 2030. These backgrounds encouraged the EU to strengthen its semiconductor supply chains.

In fact, the EU made The European Chips Act on September 21, 2023. With this regulation, the EU will address semiconductor shortages and strengthen Europe's technological leadership by mobilising more than €43 billion of public and private investments and setting measures to prepare, anticipate and swiftly respond to any future supply chain disruptions.

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<sup>15</sup> Aime Williams in Washington, *Donald Trump's tariffs in brief: universal levies and targeted retaliation*, *Financial Times*, 2025,

<https://www.ft.com/content/a5ccd14f-4717-43d9-8d39-e8ec21003fb3>.

<sup>16</sup> Bounds, A, *EU brandishes 'strong plan' to retaliate against US tariffs*, *Financial Times*, 2025, <https://www.ft.com/content/19ee5f60-106c-4dd9-a55d-f7e4d36861b5>.

<sup>17</sup> European Commission, *European Chips Act*, 2025,

[https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-chips-act\\_en](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-chips-act_en).

Enhancing traceability of chips will enable Dell to comprehend the vulnerability of products using chips. For example, using new tools leveraging granular trade and production data will be helpful to identify potential vulnerabilities in the supply chains<sup>18</sup>. A disaster-detection tool might be also useful. It provides near-real-time awareness of potential consequences for production sites located close to disaster zones. By integrating information on the location and timing of the event, this tool can identify plants at risk, enabling stakeholders to take swift actions to minimise supply chain disruptions.

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<sup>18</sup> Bonnet, P, Ciani, A, Francesca, E, Molnar, J, Nardo, M and Zaurino, E, *A monitoring framework to strengthen the EU semiconductor supply chain*, VoxEU, 2025, <https://cepr.org/voxeu/columns/monitoring-framework-strengthen-eu-semiconductor-supply-chain>.

## The United States

This section focuses on three long-term regulatory trends in the U.S. that present the most material strategic risks and decision-making challenges for Dell Technologies. These trends—U.S.–China trade volatility, ESG policy fragmentation, and advanced technology export controls—have been selected because they reflect:

- (1) the most recent and politically salient shifts under the Trump administration,
- (2) unresolved or evolving compliance expectations with high operational impact, and
- (3) regulatory areas where Dell’s current sourcing, product development, and disclosure strategies are most exposed.

Rather than attempting to summarize every regulatory change, this section distills the enduring trajectories that Dell must monitor and proactively manage to protect long-term competitiveness. These dynamics have direct implications for Dell’s component procurement, supplier engagement, climate reporting, AI innovation, and global market access. For detailed profiles of current and emerging U.S. regulations—including the CHIPS and Science Act, Uyghur Forced Labor Prevention Act, Executive Order 14257 (“Liberation Day” Tariffs), California SB 253/261, and the 2025 BIS AI export controls—please refer to [Appendix D: United States](#).

As regulatory unpredictability becomes a structural feature of the U.S. operating environment, Dell must treat the following long-term trends not simply as compliance challenges, but as strategic signals requiring continuous adjustment across the value chain

### **Political Risks: Evolving U.S.–China Trade Dynamics**

The re-escalation of U.S.–China trade tensions in 2025—most notably Executive Order 14257 imposing universal and country-specific tariffs (e.g., 145% on China)—has created significant cost volatility and supply chain disruption. China’s retaliatory tariffs and rare earth export restrictions further compound risks for companies like Dell that rely heavily on Chinese manufacturing and upstream materials.

Although there are recent indications of possible tariff moderation, as suggested by President Trump’s April 2025 comments and market responses, this shift remains rhetorical and uncertain. The embedded volatility in trade enforcement, paired with legal tools such as the Uyghur Forced Labor Prevention Act and Outbound Investment Restrictions (2025), signals a broader shift toward structural decoupling in high-tech supply chains. These measures now affect Dell’s sourcing strategies, AI investments in Shenzhen, and supplier risk mapping.

To address these challenges, Dell must continue its SafeSupply Chain Program<sup>19</sup>, diversify supplier bases away from China, and prioritize resilient regional hubs—particularly for critical materials, semiconductors, and final-stage assembly. Ongoing trade recalibrations will likely affect product pricing, input availability, and time-to-market across Dell’s global operations.

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<sup>19</sup> Dell Technologies, “IT and Cyber Security Solutions,” accessed May 1, 2025, <https://www.dell.com/en-us/lp/dt/security-solutions>.



### **Regulatory Uncertainty: Federal ESG Policy Reversals**

In March 2025, the SEC suspended enforcement of its climate disclosure rule, reflecting the Trump administration’s broader rollback of federal ESG mandates<sup>20</sup>. This creates a fragmented compliance landscape, particularly for multinational firms like Dell that must navigate state-level climate legislation, such as California SB 253 (emissions disclosures) and SB 261 (climate-related financial risk reports), alongside politically motivated restrictions like Texas Senate Bill 13, which penalizes fossil fuel “boycotts.”

While federal policy is now in flux, state regulations are expanding in scope and enforcement readiness. For example, California’s SB 253 and 261 will require Dell to develop robust internal climate risk governance and supplier-level emissions tracking systems by 2026–2027. These mandates exceed the now-stalled federal baseline and demand a proactive posture on ESG transparency and traceability.

To reduce legal and reputational exposure, Dell must continue investing in supplier emissions dashboards, third-party assurance systems, and regional compliance segmentation—enabling it to meet divergent expectations across U.S. jurisdictions. Participating in industry policy dialogues will also be critical to shape a more harmonized ESG framework and reduce long-term compliance costs.

### **AI Export Controls and Strategic Supply Chain Realignment**

The introduction of the 2025 BIS Framework for Artificial Intelligence Diffusion, which restricts exports of high-performance computing chips and model weights, marks a turning point in U.S. AI governance. These rules, building on the Export Administration Regulations (EAR), impose stringent licensing requirements, storage protocols, and supply chain due diligence obligations—especially when operating in or near China.

For Dell, which forecasts \$15 billion in AI server sales for 2025<sup>21</sup>, the export controls could delay product launches, restrict R&D collaboration, and trigger vendor requalification. The effects of these rules extend beyond compliance; they necessitate a broader supply chain realignment, focused on trusted allies and domestic manufacturing capabilities.

In parallel, outbound investment restrictions under Executive Order 14105 place additional constraints on Dell’s ability to partner with Chinese AI or semiconductor firms. These twin pressures—on capital and component flow—signal a long-term divergence in global AI ecosystems. Dell must now assess its AI product roadmap, cloud infrastructure localization, and R&D footprint through a national security lens, not just a commercial one.

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<sup>20</sup> Sidley Austin LLP, “SEC Ends Defense of Climate-Related Disclosure Rules,” last modified April 1, 2025, <https://www.sidley.com/en/insights/newsupdates/2025/04/sec-ends-defense-of-climate-related-disclosure-rules>.

<sup>21</sup> CNBC, “Dell Earnings Report Q4 2025,” last modified February 27, 2025, <https://www.cnbc.com/2025/02/27/dell-earnings-report-q4-2025-.html>.

## China

This section focuses on a targeted set of Chinese regulations—covering tariffs, national security, supply chain controls, and operational compliance institutionalization—that are most strategically significant to Dell’s long-term presence in China. These regulatory areas were selected because they either (1) reflect the most recent shifts in China’s legal framework, where adaptation is still ongoing, or (2) represent the most persistent sources of regulatory uncertainty and operational risk for foreign firms in high-tech sectors.

Rather than attempting an exhaustive legal survey, this section distills the long-term trends that Dell must consider when evaluating China’s future role in its global supply chain, sourcing strategy, and in-country operations. For detailed regulatory profiles for current and emerging regulations, refer to [Appendix D. China](#).

As China shifts from reactive to proactive regulatory governance, three core themes are emerging as long-term vectors of risk and strategic constraint:

1. Trade war regulatory escalation
2. Supply chain controls
3. Institutionalization of post-market operational compliance

These are not isolated issues—they are structurally embedded in China’s evolving industrial policy and geopolitical calculus. For Dell, they signal a growing need to treat regulatory developments not merely as compliance obligations, but as operational constraints and strategic signals that will influence everything from component sourcing to market positioning. Addressing these shifts early will be critical to maintaining supply chain resilience and protecting long-term competitiveness in China and beyond.

### **Trade War Regulatory Escalation**

China’s long-term response to the U.S.-China trade war has evolved far beyond tariff retaliation. What began as a tit-for-tat escalation has transformed into a broader legal and institutional confrontation. In early 2025, following the U.S. government’s decision to raise tariffs to 145% on a wide range of Chinese imports, China responded by raising its own tariffs to 125% on select U.S. goods between February and April.<sup>22</sup> These measures now affect high-impact sectors including electronics, energy, and transportation inputs. This escalation has significantly increased the cost of cross-border supply chains, compounding each time goods move between jurisdictions due to layered tariffs and logistics costs.<sup>23</sup> Five separate tariff announcements in 2025 alone confirm a pattern of growing volatility. While these actions are legally permissible under China’s existing trade authorities, they undermine regulatory predictability. As noted by a Columbia Business School professor, such politically driven shifts risk eroding investor confidence and weakening the stability of legal regimes for multinational firms.<sup>24</sup>

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<sup>22</sup> For a detailed breakdown, see [Appendix D, China, Section 1 \(Tariffs\)](#).

<sup>23</sup> See [Appendix A, Expert Interviews, Section 1 \(Columbia Business School Professor\)](#).

<sup>24</sup> See [Appendix A.1](#).

Yet tariffs are only one part of China’s evolving regulatory toolkit. The trade war has triggered a deeper transformation: the construction of a comprehensive legal framework designed to penalize compliance with foreign laws—particularly U.S. laws deemed extraterritorial, discriminatory, or threatening to Chinese sovereignty.<sup>25</sup> While the U.S. has historically used legal instruments to project democratic values and enforce geopolitical aims, China is now developing parallel mechanisms to defend its national interests through law.<sup>26</sup> This emerging framework aims to block, punish, and deter foreign companies that align themselves with foreign mandates, especially sanctions.

This legal retaliation strategy is not theoretical. As detailed in Winston & Strawn LLP’s analysis, China has introduced and operationalized a suite of retaliatory laws, including the [Unreliable Entity List](#), the [Anti-Foreign Sanctions Law](#), the [Regulations on Handling Foreign-Related Intellectual Property Disputes](#), and expansive data governance laws such as the [Regulation on Network Data Security Management](#).<sup>27</sup> These instruments create what legal analysts have described as a binary trap for multinational firms: comply with U.S. sanctions and face regulatory investigations, blacklisting, or reputational backlash in China—or comply with Chinese law and face enforcement action from the U.S.<sup>28</sup> Interviews with experts from Columbia Law School and Columbia Business School underscore the growing consensus that legal compliance across both systems is becoming increasingly untenable. The Columbia Law School professor noted that in many cases, it is simply “impossible” to satisfy both regimes simultaneously, especially in areas involving cross-border data transfers, national security, or third-country sanctions enforcement.<sup>29</sup>

This legal asymmetry has already been tested in practice. High-profile companies such as Intel, H&M, and Walmart’s Sam’s Club have been publicly criticized by Chinese government-affiliated media, state agencies, and nationalist consumers for perceived alignment with U.S. sanctions or sourcing restrictions related to Xinjiang.<sup>30</sup> These campaigns, which range from regulatory probes to political rebukes, carry multifaceted risk—legal, reputational, and commercial. They are uniquely damaging because they operate both within formal legal frameworks and informal political channels, blurring the lines between government action and popular sentiment. The result is a fragmented compliance landscape with no clear “safe” path forward for multinationals operating in both jurisdictions.

Ultimately, the trade war is no longer a matter of tariffs alone. It now represents a structural divergence in legal systems, regulatory philosophies, and geopolitical risk. What began as economic retaliation has become a contest of legal sovereignty and institutional power, forcing

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<sup>25</sup> Winston & Strawn LLP, *How Multinationals Can Withstand US-China Trade Conflict*, March 16, 2022, <https://www.winston.com/en/insights-news/how-multinationals-can-withstand-us-china-trade-conflict>.

<sup>26</sup> *Ibid.*

<sup>27</sup> For a detailed breakdown, see [Appendix D, China, Section 2 \(National Security\)](#).

<sup>28</sup> See the discussion of penalties in [Appendix D, 2](#).

<sup>29</sup> See [Appendix A, Expert Interviews, Section 2 \(Columbia Law School Professor\)](#).

<sup>30</sup> Winston & Strawn, *How Multinationals Can Withstand US-China Trade Conflict*.

multinational firms to navigate not just commercial pressures, but a regulatory battleground where the laws of two superpowers directly conflict.

### **Supply Chain Controls**

China's long-term strategy in supply chain governance reveals a clear trend toward regulatory securitization and upstream resource control, aimed at safeguarding national security, reinforcing self-reliance, and enhancing leverage in geopolitical contests. A wide array of regulations—from the [Export Control List Update](#) to the [Regulation on Export Control of Dual-Use Items](#)—establish a formalized, compliance-heavy framework that now governs the sourcing, export, and circulation of critical materials.<sup>31</sup> These efforts are no longer reactive. Instead, they reflect a structural shift in China's supply chain policy—one that is institutional, preemptive, and embedded within broader industrial and security strategies.

This shift is codified in a series of overlapping laws and regulations. The Export Control Law and its updated Dual-Use Items List create a centralized licensing regime that mandates compliance with end-use/end-user disclosure, export certificates, and internal audit systems.<sup>32</sup> The [Rare Earth Administration Regulation](#) and the [Export Controls on Certain Medium and Heavy Rare Earth Items](#) further restrict the availability of strategic minerals such as dysprosium and terbium—inputs critical for Dell's advanced electronics and thermal systems.<sup>33</sup> Similarly, the [Export Controls on Tungsten, Tellurium, Bismuth, Molybdenum, and Indium-Related Items](#) targets key materials in high-efficiency computing and battery technologies. Each measure imposes more detailed licensing obligations, limits transaction flexibility, and raises operational thresholds for compliance.

This control trajectory is further reinforced by emerging regulations. The [Mineral Resources Law](#) imposes strict licensing, ecological restoration mandates, and punitive measures against unauthorized extraction or trade of strategic minerals. Paired with the new [SME Payment Regulation](#) and the draft [Supply Chain Service Classification standard](#), China is also tightening downstream expectations—demanding timely payment practices, supply chain traceability, and digitalization of compliance systems.<sup>34</sup>

Interviews with Columbia faculty highlight that these policies reflect China's pivot from soft industrial planning to hard regulatory enforcement. One Columbia Business School professor emphasized that supply chain governance is now a key domain of "legal geopolitics," wherein China uses regulatory tools not only to counter U.S. trade measures, but also to project

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<sup>31</sup> For a detailed breakdown, see [Appendix D, China, Section 3 \(Supply Chain Controls\)](#).

<sup>32</sup> Chen Zhu, Derik Rao, Yuting Xie, and Nicholas Li, "China's New Export Control Framework: Key Changes for Dual-Use Items," *Morrison Foerster*, December 16, 2024, <https://www.mofo.com/resources/insights/241216-china-s-new-export-control-framework-key-changes>.

<sup>33</sup> Lewis Jackson, Amy Lv, Eric Onstad, and Ernest Scheyder, "China Hits Back at US Tariffs with Export Controls on Key Rare Earths," *Reuters*, April 4, 2025, <https://www.reuters.com/world/china-hits-back-us-tariffs-with-rare-earth-export-controls-2025-04-04>.

<sup>34</sup> Giulia Interesse, "China Issues New Export Control Regulations: What Businesses Need to Know?" *China Briefing*, November 19, 2024, <https://www.china-briefing.com/news/china-issues-new-export-control-regulations/>.

industrial discipline and protect core technology dependencies.<sup>35</sup> The Columbia Law School professor echoed this, noting that the interplay between export controls and legal discretion creates an "opaque but highly potent" compliance risk for foreign firms—especially those in sensitive sectors like semiconductors, defense-adjacent hardware, and AI-enabled systems.<sup>36</sup>

This evolving control architecture directly intersects with Dell's material dependencies. Among the 44 critical raw materials identified by Dell's internal assessment,<sup>37</sup> at least ten—bismuth, gallium, germanium, graphite, indium, molybdenum, tellurium, tungsten, antimony, and heavy rare earth elements (HREEs)—are now subject to China's export control regime.<sup>38</sup> These inputs are essential for Dell's production of semiconductors, power systems, data center hardware, and thermal shielding components. The inclusion of these materials in China's tightened control lists increases licensing complexity and heightens the risk of export delays, denials, or conditional approvals, especially for high-tech components integrated into sensitive sectors like computing, energy, and defense-adjacent applications.

For a multinational technology manufacturer like Dell, the convergence of China's upstream resource controls and downstream regulatory enforcement poses critical vulnerabilities. Dell's exposure is particularly pronounced at the pre-final assembly stage: its global manufacturing network relies on stable access to materials like rare earth magnets, advanced alloys, and chip-grade tungsten. The April 2025 addition of U.S. firms to China's [Export Control List](#) further increases risk by disrupting third-party vendor relationships and joint development partnerships.

Even when licensed exports are permitted, the enhanced scrutiny over end-uses, end-users, and re-exports increases the transaction burden and introduces timeline uncertainty.<sup>39</sup> The discretionary nature of enforcement—Ministry of Commerce (MOFCOM) can deny licenses based on national interest without explanation—creates operational unpredictability even for compliant exporters. Dell also faces indirect risk from upstream suppliers who may themselves struggle to maintain compliance, leading to cascading bottlenecks or reputational exposure.

Moreover, the growing reach of extraterritorial Chinese regulations, such as controls on the domestic provision of dual-use items to foreign persons (even within China), complicates Dell's contract manufacturing and R&D operations involving cross-border partners.<sup>40</sup> The fragmented and evolving nature of Chinese supply chain regulations imposes a heavy coordination cost across Dell's legal, procurement, and compliance functions.

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<sup>35</sup> See [Appendix A.1](#).

<sup>36</sup> See [Appendix A.2](#).

<sup>37</sup> See [Appendix A.3](#).

<sup>38</sup> For a detailed breakdown, see [Appendix D.3](#).

<sup>39</sup> See the discussion of implications in [Appendix D.3](#).

<sup>40</sup> Zhu et al., *China's New Export Control Framework*, Morrison Foerster, 2024.

### **Institutionalization of Post-Assembly Operational Compliance**

China's regulatory environment is undergoing a marked shift toward institutionalized compliance regimes, especially in post-final assembly operations. This trend reflects a broader effort to formalize legal enforcement mechanisms, align domestic policies with national security objectives, and close perceived gaps in regulatory oversight. As seen in the implementation of high-severity laws like the [Regulation on Network Data Security Management](#), the updated [Enterprise Income Tax \(EIT\) regulations](#), and the forthcoming [VAT Law](#), China's legal infrastructure is moving from fragmented enforcement toward a unified, rule-based—but often opaque—regulatory state.

This trend is not incidental. As noted by faculty experts at Columbia Business School and Columbia Law School, Beijing's new approach is not merely compliance-oriented—it's strategic.<sup>41</sup> The aim is to assert greater control over corporate behavior, align foreign enterprise activity with state industrial and security goals, and use legal regimes as tools of national leverage. These developments intensify corporate obligations in areas such as data governance, tax transparency, consumer rights, and standardization—each of which directly affects Dell's post-market operations, cloud platforms, and business-to-government (B2G) engagements.

Among the most impactful of these is the **Network Data Security Management Regulation**, which mandates encryption, real-time breach reporting, and strict protocols for third-party data processors. Dell, as a global IT systems provider, must now reassess how its platforms handle personal and operational data inside China. Failing to comply could result in suspension of services, revocation of licenses, or criminal liability. Simultaneously, the **EIT Law** and **VAT Law** enforce tighter scrutiny over cross-border revenues, transfer pricing documentation, and invoice standardization. These tax obligations extend compliance burdens across Dell's internal finance, procurement, and legal teams and require systemwide upgrades, especially with the mandate of e-invoicing and inter-agency reporting.

China's 2025 [Stabilizing Foreign Investment Action Plan](#) presents a parallel narrative: one that encourages foreign participation while embedding it within stricter legal norms.<sup>42</sup> Though the plan introduces supportive language—such as market liberalization in telecoms and enhanced service guarantees—its core remains regulatory standardization.<sup>43</sup> Even facilitative policies come with conditions: medical device and data service firms must meet localization criteria, domestic content requirements, and standardization thresholds to benefit from incentives.<sup>44</sup>

This is echoed in the [Implementation Regulations of the Standardization Law](#), which require that products meet mandatory national standards, that internal standards be filed, and that all conformity assessments align with official inspection protocols. These rules raise the bar

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<sup>41</sup> See [Appendix A](#).

<sup>42</sup> Cisema, *China's 2025 Action Plan to Stabilize Foreign Investment*, April 9, 2025, <https://cisema.com/en/china-2025-foreign-investment-policy/>.

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.



for Dell’s product documentation, quality assurance, and component traceability, particularly for enterprise solutions tied to public sector bids.

Meanwhile, the [Consumer Rights Protection Implementation Rules](#) further increase exposure by holding vendors accountable for post-sale harms, misleading marketing, and service performance. This is especially relevant as Dell’s footprint in China includes direct-to-consumer and enterprise hardware sales. Non-compliance risks not only fines but reputational damage and suspension from critical markets.

Despite these heightened obligations, Dell also enjoys some opportunities. As highlighted in China Briefing’s May 2025 review of regulatory trends, China’s evolving frameworks may favor compliant and embedded players.<sup>45</sup> Dell can leverage its robust compliance infrastructure to gain preferred access in government procurement, secure “Made-in-China” designations through local production partnerships, and explore FTZ-based pilot programs that offer relaxed cross-border data transfer or reduced tax burdens.<sup>46</sup> Dell’s presence in Free Trade Zones such as Shanghai’s Lingang New Area may offer critical regulatory relief—especially in areas like data flow, telecom services, and cloud storage.

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<sup>45</sup> Arendse Huld, “China’s FTZs – New Opinions Signal Regulatory Easing,” *China Briefing*, May 1, 2025, <https://www.china-briefing.com/news/chinas-ftzs-new-opinions-signal-regulatory-easing/>.

<sup>46</sup> Ibid.

## The United Kingdom

The U.K.'s regulatory priorities closely align with those of the EU, particularly in areas such as sustainability, human rights, digital platforms and cybersecurity. While many U.K. regulations are currently less stringent than their EU counterparts, several are under review, and new, more robust regulations are expected to emerge. Additionally, the General Product Safety Regulations 2005 require companies to provide information about the producer and their address. Although not recent, this regulation remains one of the most important in the U.K. due to its strict compliance requirements.

For the full regulatory analysis, please refer to [Appendix X. U.K.](#) This section outlines only long-term regulatory considerations, the key areas prioritized by the U.K through its regulations, which are expected to be major long-term factors influencing Dell's supply chains.

The U.K. prioritizes sustainability, human rights, digital platforms, and cybersecurity through its regulatory framework, much like the EU. While many of these regulations are currently less stringent than those of the EU, they often reflect similar priorities, suggesting that U.K. supply chain regulations tend to align with or follow the EU's direction.

For instance, while the EU has already enacted comprehensive Batteries Regulation addressing the environmental impact of batteries, the U.K. has yet to introduce a similar bill in Parliament. However, it is likely that the U.K. will eventually adopt comparable legislation, particularly for end-of-life battery management.<sup>47</sup> The current regulatory gap presents notable challenges for applications such as Battery Energy Storage Systems (BESS) and electric vehicles (EVs). Specifically, existing decommissioning requirements in the U.K. assign responsibility for end-of-life battery disposal, recycling, or reuse for only one year—far shorter than the lifespan of most grid-scale BESS projects. Without more robust legislation, there remains a significant loophole that enables developers to sidestep long-term responsibility.

In contrast, the U.K. enacted the Modern Slavery Act in 2015 earlier than the EU, demonstrating an early emphasis on human rights. However, the current legislation lacks strict enforcement mechanisms or penalties, prompting the U.K. to actively review the Act. The Joint Committee on Human Rights in Parliament has launched an inquiry into forced labour within U.K. supply chains, whose deadline for written submissions to the Committee is February 14, 2025.<sup>48</sup> This review aims to strengthen the Act by addressing forced labor risks in global supply chains and improving the country's overall approach to combating modern slavery—driven by growing domestic and international pressure for more effective protections.

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<sup>47</sup> Ross, K. (2024). *UK likely to mirror EU Batteries Regulation: Freeths. The Solar Power Portal.* <https://www.solarpowerportal.co.uk/uk-copy-eu-batteries-regulation-freeths-law/>

<sup>48</sup> Connellan, C, Forwood, G and Ahmad, S. (2025). *UK efforts to address forced labour in supply chains. White & Case.* <https://www.whitecase.com/insight-alert/uk-efforts-address-forced-labour-supply-chains>.



As the U.K.'s regulatory priorities closely mirror those of the EU, Dell can largely build upon its EU compliance strategies to prepare for U.K. requirements. However, to stay ahead of potential regulatory divergence, Dell should monitor U.K. specific developments, such as the ongoing review of the Modern Slavery Act and the anticipated updates to battery regulation. Establishing a unified compliance framework that flexibly adapts to both EU and U.K. standards will allow Dell to minimize duplication, ensure consistency across markets, and maintain its competitive advantage in the region.

## Southeast Asia

This section focuses on a targeted set of Southeast Asian regulatory trends—spanning localization mandates, sustainability transitions, and supply chain securitization—that hold strategic significance for multinational enterprises operating in the region’s electronics and manufacturing sectors. These areas were prioritized because they either (1) reflect recent, transformative shifts in regional policy frameworks or (2) represent persistent challenges that amplify operational complexity for foreign firms, particularly in high-tech industries.

Rather than providing an exhaustive legal review, this analysis distills the systemic trends reshaping Southeast Asia’s role in global supply chains. For granular details on country-specific regulations, compliance requirements, and emerging legislation, refer to [Appendix F: Southeast Asia](#).

As Southeast Asian nations transition from passive policy adoption to proactive regulatory governance, three interconnected themes are emerging as long-term drivers of risk and opportunity:

1. Localization and domestic value-addition mandates
2. Sustainability-driven operational overhauls
3. Supply chain securitization and geopolitical alignment

These trends are not isolated—they are deeply embedded in the region’s industrial ambitions, environmental commitments, and geopolitical balancing act between major powers. For global firms like Dell, they signal a critical need to reinterpret regulations as strategic indicators, not just compliance hurdles, that will shape decisions from supplier diversification to market-entry strategies. Proactive adaptation to these shifts will be essential to maintaining competitive resilience in Southeast Asia’s rapidly evolving economic landscape.

### **Localization Mandates: Redefining Regional Value Chains**

Over the past decade Southeast-Asian governments have moved decisively from their historical “assembly-only” posture toward policies that hard-wire domestic value-addition into every layer of the electronics supply chain. Indonesia provides the sharpest illustration. Under *Tingkat Komponen Dalam Negeri* (TKDN)<sup>49</sup> regulations, basic smartphones sold to the public sector needed just 25 percent local content in 2016; by 2024 that threshold had climbed to 38 percent for 5G-capable devices and is scheduled to hit **50 percent by 2030**, with an expanded mandate that covers laptops, data-center equipment, and network infrastructure purchased by state-owned enterprises. TKDN audits are “living” reviews: the Ministry of Industry may reopen a finished-goods certificate if new sub-tier data suggest a shortfall—creating an evergreen compliance obligation.

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<sup>49</sup> Cekindo. "What Is TKDN in Indonesia: Complete Guide to Local Content Requirements - Part 1." <https://www.cekindo.com/blog/what-is-tkdn-indonesia>

Parallel shifts are visible across the region. **Vietnam’s Decree 18/2021** already conditions corporate-income-tax holidays on proof that at least 1 percent of annual revenue is funnelled into local R&D and workforce-training programs. Draft amendments now under National Assembly review would double that requirement for enterprises earning more than US \$500 million in turnover, effectively forcing large EMS providers to establish in-house design or reliability-engineering teams in Hanoi or Ho Chi Minh City. **Thailand’s Board of Investment (BOI)**<sup>50</sup> incentives, once solely fiscal, now include a localisation scorecard measuring domestic silicon-wafer dicing, substrate production, and IC-packaging steps; failing to meet annual milestones can trigger claw-backs of import-duty exemptions granted in earlier years. Malaysia’s **National Semiconductor Strategy (NSS)**<sup>51</sup> pushes even further. It links access to a 25-billion-ringgit grant pool to a “70-30” rule—70 percent local engineering staff (citizens or permanent residents) and at least 30 percent of registered IP developed onshore. NSS grant agreements grant the government step-in rights if these ratios are not met for three consecutive years, placing a structural premium on sustained localisation rather than one-off head-count transfers.

For Dell—and multinationals in similar positions—the net result is a delicate optimisation problem. **Under-localise** and firms risk losing eligibility for government procurement, free-trade-zone (FTZ) privileges, or accelerated depreciation allowances. **Over-localise**, however, and they may inflate bill-of-materials costs, fragment global design-release schedules, and jeopardise supply resilience if a single country tightens export-licensing on critical inputs (as Indonesia did with nickel). A balanced playbook requires:

- **Modular bill-of-materials engineering.** For example, relocating battery-pack casings, plastic shrouds, or wiring harness assembly into Batam Island can add 8–10 percent TKDN value without touching the high-precision logic board built in Penang.
- **Dual-path certification.** Dell could route a “local-content-maximised” notebook variant exclusively to Indonesian or Thai state tenders, while maintaining a “global” SKU for private-sector channels, avoiding unnecessary cost uplift.
- **Grade-of-origin digitalisation.** Blockchain-anchored tokens that record each component’s country of transformation enable Dell to prove real-time localisation compliance during surprise audits—already piloted by several EMS providers in Vietnam’s Bắc Giang cluster.

Looking ahead, two macro-signals matter most. First, ASEAN’s **Regional Comprehensive Economic Partnership (RCEP)** allows firms to cumulate local value across member states—yet TKDN-style rules are explicitly carved out of RCEP’s tariff disciplines. Second, governments increasingly tie localisation demands to industrial-policy carrots: Malaysia’s 5+5-year tax holiday, Thailand’s 17-year land-lease concessions in the Eastern Economic

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<sup>50</sup> Thailand Board of Investment. *Thailand Investment Review Newsletter*, July 2024. Thailand Board of Investment. [https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR\\_Newsletter\\_July2024.pdf](https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR_Newsletter_July2024.pdf)

<sup>51</sup> Tradeimex. *Malaysia Chipset Exports: Navigating Semiconductor Regulations Amid US Pressure*. Tradeimex.2024 <https://www.tradeimex.in/blogs/malaysia-chipset-exports-semiconductor-regulations-us-pressure>

Corridor, and Vietnam's new R&D cash-rebate program (15 percent of qualifying spend). Dell therefore needs a rolling, country-by-country cost-benefit matrix that models localisation thresholds, incentive phasing, and political-risk coefficients, updating at least quarterly as draft bills move through parliaments. Firms that treat localisation as a negotiable procurement lever—rather than a fixed tax—will be positioned to arbitrage incentives while maintaining global design integrity.

#### Sustainability-Driven Operational Overhauls

Sustainability in Southeast Asia has shifted from aspirational CSR to enforceable regulation, propelled by three forces: escalating domestic environmental crises, the EU's carbon-border pressure, and the capital-markets pivot toward green-taxonomy alignment. **Singapore** leads with the *Electronics Sustainability & Circular Economy Framework* (ES-CEF), a 2026-2030 roadmap that mandates (a) **30 percent recycled-content** plastics in consumer electronics housings, (b) **right-to-repair availability** of key modules for at least seven years, and (c) public disclosure of a product's **Catena-X Product Carbon Footprint** (PCF) under ISO 14067.<sup>52</sup> Non-compliant imports may still enter but will face a tiered Advanced Recycling Fee that can add 1–3 percent to landed cost—essentially a carbon-linked tariff.

**Thailand** is close behind. The Pollution Control Department's draft *E-Waste Extended Producer Responsibility (EPR) Act*, expected to pass in 2025, places cradle-to-grave liability on OEMs for collection and verified recycling of **65 percent** (by weight) of electronics sold domestically within five years. Deposit-refund schemes and QR-code traceability are mandated, with uncollected units triggering a per-kilogram levy pegged to EU Battery Regulation fine levels.<sup>53</sup> In **Malaysia**, the 2024 update to the Energy Commission's *Minimum Energy Performance Standards (MEPS)* introduces a "progressive gain" formula: PCs and servers must demonstrate a **10 percent annual improvement** in energy efficiency through 2028 or lose SIRIM certification, effectively blocking market access.<sup>54</sup>

Two additional cross-border levers amplify the trend. The **ASEAN Taxonomy for Sustainable Finance (Version 2, 2024)** classifies semiconductor back-end assembly as "green" only if facilities source **80 percent renewable electricity** or demonstrate on-site emissions abatement. Banks in Singapore, Malaysia, and Thailand already price corporate loans 20–50 basis points lower for taxonomy-aligned borrowers. Meanwhile, the **EU Carbon Border Adjustment Mechanism (CBAM)**, entering its financial phase in 2026, will impose carbon-credit purchases on exports of high-intensity goods—pressure that regional governments are mirroring through nascent Emissions Trading Schemes (ETS) in Vietnam and Indonesia.

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<sup>52</sup> AEB. *Singapore Export Control Compliance: A Comprehensive Guide*. AEB. 2024  
<https://www.aeb.com/en/magazine/articles/singapore-export-control-compliance.php>

<sup>53</sup> Thailand Board of Investment. *Thailand Investment Review Newsletter, July 2024*. Thailand Board of Investment. July 2024a.  
[https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR\\_Newsletter\\_July2024.pdf](https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR_Newsletter_July2024.pdf)

<sup>54</sup> Tradeimex. *Malaysia Chipset Exports: Navigating Semiconductor Regulations Amid US Pressure*. Tradeimex 2024.  
<https://www.tradeimex.in/blogs/malaysia-chipset-exports-semiconductor-regulations-us-pressure>

Operationally, Dell must orchestrate a **multilayer sustainability stack**:

1. **Materials re-specification.** Shift to >30 percent post-consumer-recycled (PCR) plastics for Singapore-bound products; pilot aluminium recycled-content targets in Malaysia to pre-empt similar standards.
2. **Circular-design engineering.** Adopt modular laptop architecture with tool-less disassembly for memory and battery, satisfying both Singapore's repairability index and Thailand's EPR disassembly targets.
3. **Real-time carbon accounting.** Extend Dell's blockchain PCF ledger—already piloted in EU markets—to Southeast-Asian EMS sites, integrating energy meter data to feed Singapore's National Environment Agency portal and Thai-ESRS disclosures.
4. **Reverse-logistics partnerships.** Leverage local recyclers (e.g., Ingram Micro's ITAD facility in Chachoengsao) under joint-venture structures that satisfy Thai ownership caps while securing closed-loop feedstock for recycled plastics.

The upside is strategic. Early compliance can unlock ESG-weighted public-procurement bonuses: Singapore's government tech tenders assign up to **10 percent bid weight** to circular-economy metrics, while Thailand's Green Procurement Roadmap fast-tracks import permits for certified low-carbon devices. Dell can monetise PCF data licences for downstream customers seeking scope-3 accounting accuracy, turning a regulatory cost centre into a revenue-adjacent offering.

### **Supply-Chain Securitization and Geopolitical Alignment**

The third structural pillar is the securitization of supply chains under the shadow of great-power competition. Historically neutral, Southeast-Asian capitals now use export controls, strategic-goods lists, and investment-screening mechanisms to navigate U.S.-China tensions while safeguarding indigenous resource endowments.

**Malaysia's 2024 Semiconductor Export Control Regulations**<sup>55</sup> illustrate the shift. They codify three licensing tiers: *Green* (mainstream ICs), *Amber* (14-28 nm nodes, advanced analog), and *Red* ( $\leq 7$  nm logic, compound semiconductors with military utility). *Red-tier* exports require end-use certification aligned with U.S. EAR "Notified Country" lists—effectively syncing Kuala Lumpur with Washington's position. Simultaneously, Malaysia's Investment Coordination Committee may deny M&A clearance if it perceives foreign takeovers would "undermine national technological self-reliance."

Indonesia pursues another vector: **resource weaponisation**. A 2023 presidential decree banned exports of raw nickel ore; by 2024 Jakarta hinted at quotas for mixed-hydroxide precipitate (MHP), nudging refiners into high-pressure acid-leach (HPAL) plants jointly financed by Chinese SOEs. Draft amendments to the 2020 *Mineral and Coal Law* could extend

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<sup>55</sup> Tradeimex. *Malaysia Chipset Exports: Navigating Semiconductor Regulations Amid US Pressure*. Tradeimex 2024b.  
<https://www.tradeimex.in/blogs/malaysia-chipset-exports-semiconductor-regulations-us-pressure>

quotas to tin, bauxite, and heavy rare-earth concentrates by 2026, effectively forcing global OEMs to co-invest in local midstream capacity if they wish to secure supply.

Vietnam's newly promulgated **QCVN 134:2024/TT-BTTTT**<sup>56</sup> safety-and-RF standard took effect in January 2025, accelerating “trusted importer” pilot licences but subjecting high-power Wi-Fi-6E and 5G modules to 100 percent batch testing—delaying time-to-market unless firms pre-position certified inventory. Singapore's **Strategic Goods Control (SGC) Act** amendment of 2024 widened dual-use definitions to include AI inference accelerators  $\geq 4,800$  TOPS and high-end GPU clusters, aligning with U.S. BIS thresholds; licence processing time doubled from 14 to 28 days.

These controls converge with localisation and sustainability to form a complex matrix. Dell could find its Malaysian OSAT partner restricted from shipping advanced substrates to China while simultaneously relying on Indonesian HPAL nickel that triggers U.S. Inflation Reduction Act content calculations. Navigating this requires:

- **Multi-jurisdictional licence compliance engines** mapping Malaysian, Singaporean, and U.S. export-control codes to each SKU.
- **Commodity-risk hedging** via long-term offtake contracts for Australian or U.S. rare-earths, reducing dependence on Indonesian quotas.
- **FTZ optimisation**—e.g., processing intermediate boards in Batam (Indonesia Special Economic Zone) under bonded status, then final assembly in Johor's Senai FTZ, capturing localisation value while avoiding dual-use red tape until the last mile.

Crucially, ASEAN itself is emerging as a geopolitical broker. The 2025 launch of the **ASEAN Supply Chain Resilience Platform**—a data-space for real-time choke-point alerts—allows member states to trigger “green-lane” customs treatment for priority medical or tech inputs during crises, provided participants meet common traceability standards. Dell's upfront integration into this platform could secure expedited clearance during the next global shortage event.

## **Synthesis**

Together, these three trend vectors—localisation, sustainability enforcement, and supply-chain securitization—signal a decisive inflection in Southeast Asia's regulatory arc. The region is no longer a low-regulation adjunct to China; it is becoming a rule-maker that blends inducements with constraints to steer industrial development, climate objectives, and geopolitical alignment on its own terms. Multinationals that decode these signals early—embedding localisation flexibility, investing ahead of ESG mandates, and hard-wiring geopolitical optionality into supplier networks—will transform compliance costs into durable competitive moats. Those that delay will confront compound shocks: tariff-free zones that flip to localisation traps, eco-fees that erode margins, and dual-use export denials that strand inventory in bonded warehouses.

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<sup>56</sup> Luật Việt Nam. *Complete Guide to Vietnam's Semiconductor Investment Policies 2025*. <https://english.luatvietnam.vn/legal-news/complete-guide-to-vietnams-semiconductor-investment-policies-2025-4729-100816-article.html>

Proactive strategy, underpinned by granular regulatory intelligence and cross-functional scenario planning, is the only viable path to resilience in Southeast Asia's fast-maturing regulatory landscape.

## India

This section focuses on a targeted set of Indian regulatory developments—spanning supply chain controls, digital governance, and compliance institutionalization—that are most strategically significant to Dell’s long-term footprint in India. These areas were selected because they either (1) reflect India’s evolving ambitions to position itself as a global manufacturing and digital services hub, or (2) represent persistent implementation risks and compliance uncertainties that could affect Dell’s operational continuity and cost structure.

Rather than surveying the entire legal landscape, this section distills the long-term trends that Dell must evaluate when considering India’s role in future sourcing decisions, digital operations, and supplier engagement strategies. For detailed profiles of current and emerging regulations, refer to [Appendix G. India](#).

As India transitions from policy aspiration to institutional enforcement, three long-term regulatory vectors are emerging as drivers of both opportunity and constraint:

- Supply chain formalization
- Digital and AI governance
- Compliance institutionalization and ESG integration

These are not standalone developments—they are embedded in India’s broader industrial policy, digital economy strategy, and geopolitical positioning. For Dell, they signal a need to engage India not just as a low-cost production alternative, but as a regulatory ecosystem where sustained local engagement, operational transparency, and strategic foresight will determine long-term competitiveness and access to policy incentives. Addressing these shifts early will be critical to maximizing India’s potential while mitigating exposure to compliance and reputational risks.

### **Supply Chain Formalization**

India’s long-term regulatory trajectory reveals a steady push toward formalizing its supply chain ecosystem, driven by policy reforms, digital modernization, and industrial incentives. For Dell, this presents a dual reality. On one hand, India offers a cost-effective, strategically located, and politically aligned alternative to China. On the other, Dell must navigate a maturing yet still fragmented regulatory landscape that imposes new compliance expectations while struggling with on-the-ground execution challenges. These developments demand that Dell treat India not simply as a backup production site, but as a complex strategic environment where operational gains must be weighed against evolving regulatory risks.

One of the defining regulatory trends is India’s push for supply chain formalization through frameworks such as the [Mines and Minerals \(Amendment\) Act](#) and the [Notification of Schedule-II \(Export Policy\) of ITC\(HS\)](#). These reforms aim to increase transparency and traceability in upstream sourcing and export classifications. The goal, as articulated in



government documents and highlighted by Forbes contributor Dave Evans, is to attract multinational investment by offering standardized systems, predictable rules, and lower landed costs compared to China.<sup>57</sup> The government's Production Linked Incentive (PLI) schemes and policies like "Make in India" and the National Policy on Electronics further underscore its commitment to building a globally competitive electronics manufacturing base.<sup>58</sup> For Dell, this means improved access to raw materials and export routes, provided its operations—and its vendors—can keep pace with these shifting administrative and digital requirements.

However, Dell must also contend with structural weaknesses in India's domestic supply base. As reported in *EE Times*, small-scale electronics manufacturers in India face persistent barriers such as weak supplier credibility, limited financing, logistical bottlenecks, and brand bias favoring established foreign players.<sup>59</sup> These firms play a vital role in India's component ecosystem but often lack the scale or institutional backing to meet the rigorous expectations of multinational partners like Dell. The resulting inconsistencies in quality, reliability, and compliance readiness could disrupt Dell's procurement timelines and reputational standards if not proactively managed.<sup>60</sup> These risks are especially salient given Dell's reliance on timely and traceable component flows for both domestic and export-oriented production.

At the same time, the regulatory push is not just technical—it is strategic. As Farok J. Contractor, a Rutgers Business School Professor, explains that India's approach to GVC participation reflects a "supply chain mindset" shaped by both economic necessity and geopolitical opportunity.<sup>61</sup> While multinationals are encouraged to localize manufacturing and co-develop skills, India also expects them to shoulder greater responsibility for compliance, transparency, and local capacity building.<sup>62</sup> For Dell, these trends imply a future where access to incentives, local market opportunities, and even reputational standing may hinge on the company's ability to embed itself within India's formalized ecosystem—through training, financing, or co-development of supplier capabilities.

In sum, India's regulatory landscape offers Dell long-term promise—but not without complexity. The country's combination of low tariffs, industrial incentives, and government enthusiasm for foreign partnerships aligns well with Dell's strategic sourcing needs. However, the alternative is exposure to inefficiencies, reputational risk, or exclusion from preferential programs. Going forward, the strategic management of Indian suppliers will require not just contracts and codes of conduct, but sustained partnership and on-the-ground engagement.

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<sup>57</sup> Dave Evans, "India's Rise in the Global Supply Chain," *Forbes*, May 20, 2024, <https://www.forbes.com/sites/daveevans/2024/05/20/indias-rise-in-the-global-supply-chain/>.

<sup>58</sup> Ibid.

<sup>59</sup> Saumitra Jagdale, "Supply Chain Challenges Remain for India Despite Ambition," *EE Times*, January 16, 2025, <https://www.eetimes.com/supply-chain-challenges-remain-for-india-despite-ambition/>.

<sup>60</sup> Ibid.

<sup>61</sup> Farok J. Contractor, "How Do Multinationals View India as a Global Supply Chain Partner and Market? Benefits, Concerns, and Obstacles," *GlobalBusiness Blog*, December 20, 2024, <https://globalbusiness.blog/2024/12/20/how-do-multinationals-view-india-as-a-global-supply-chain-partner-and-market-benefits-concerns-and-obstacles/>.

<sup>62</sup> Ibid.

## **Digital and AI Governance**

India's evolving digital governance framework—anchored by the 2023 [Digital Personal Data Protection \(DPDP\) Act](#), AI regulatory debates, and sovereign data mandates—signals a long-term shift toward comprehensive control over digital flows, algorithmic systems, and cross-border data transactions. For Dell, these shifts present both opportunity and operational risk. The DPDP Act introduces obligations for data fiduciaries and significant data fiduciaries (SDFs), including requirements for consent management, grievance redressal, data protection officers, and data protection impact assessments (DPIAs) for high-risk data operations.<sup>63</sup> Though currently lighter in compliance cost than earlier drafts, the law centralizes discretionary power with the government, leaving future enforcement uncertain.<sup>64</sup>

For Dell, which must coordinate vast datasets across sales, customer service, supply chain monitoring, and AI-enabled logistics, India's emergent regulatory landscape requires upfront adaptation. The law's potential extraterritorial reach—covering non-Indian entities processing data linked to Indian citizens—broadens Dell's compliance perimeter beyond in-country operations. Moreover, sectoral regulators, like the Reserve Bank of India, may impose additional localization mandates that override the Act's relatively liberal data transfer rules.<sup>65</sup> This creates fragmented compliance obligations, with region-specific divergences in digital governance.

On the AI front, India has not passed a comprehensive AI law but is moving toward a multi-layered, risk-sensitive approach.<sup>66</sup> As outlined by Carnegie India, the current framework relies on sectoral regulators and iterative governance rather than immediate statutory overhauls. Yet, increasing interest from government agencies—including the Ministry of Electronics and Information Technology (MeitY) and the National Security Council Secretariat—suggests growing scrutiny of high-risk AI use cases and algorithmic accountability.<sup>67</sup> Dell's future AI solutions deployed for supply chain optimization or predictive analytics may fall under targeted advisory or co-regulatory scrutiny, especially if they influence employment or infrastructure in India.

Critically, the Carnegie report raises concerns over AI systems repurposing personal data beyond original intent—highlighting the breakdown of traditional consent models in the face of generative AI.<sup>68</sup> For Dell, which utilizes AI across procurement, fraud detection, and service

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<sup>63</sup> Anirudh Burman, *Understanding India's New Data Protection Law* (Carnegie Endowment for International Peace, October 3, 2023), <https://carnegieendowment.org/research/2023/10/understanding-indias-new-data-protection-law?lang=en>.

<sup>64</sup> Ibid.

<sup>65</sup> Ibid.

<sup>66</sup> See [Appendix F. India \(Draft AI Governance Guidelines\)](#)

<sup>67</sup> Amlan Mohanty and Shatakrtu Sahu, *India's Advance on AI Regulation* (Carnegie Endowment for International Peace, November 21, 2024), <https://carnegieendowment.org/research/2024/11/indias-advance-on-ai-regulation?lang=en>.

<sup>68</sup> Ibid.

modeling, this could raise new governance hurdles, particularly around explainability and data provenance.

Meanwhile, the DLA Piper 2025 report underscores that compliance expectations will escalate as India enforces data rights, breach notification duties, and digital sovereignty standards.<sup>69</sup> Even though the DPDP Act is not yet fully enforced, draft implementation rules point to pending obligations on breach reporting timelines, data storage limits, and purpose-bound processing. These legal trends push Dell toward greater data traceability and operational transparency within India—a necessary investment if it intends to maintain trusted data operations and avoid enforcement risks from India’s Data Protection Board.

In sum, the convergence of India’s data protection and AI governance frameworks introduces a paradigm where digital operations are increasingly state-shaped. Dell must respond not only through privacy compliance and supplier risk assessments but also by embedding local engagement and legal foresight into its India strategy. This includes monitoring future iterations of the Digital India Act, AI-specific rules, and sectoral mandates that may influence Dell’s product design, vendor vetting, and real-time analytics capabilities within Indian territory.

### **Compliance Institutionalization and ESG Integration**

India’s regulatory environment is undergoing a long-term transformation toward compliance institutionalization and ESG integration, a shift with far-reaching implications for Dell’s operations, tax strategy, and stakeholder engagement. This trend signals a break from fragmented enforcement and opaque oversight, toward a rule-based, transparency-driven regime that increasingly mirrors global standards while incorporating uniquely Indian considerations. For multinational firms like Dell, the change presents both operational challenges and strategic opportunities—particularly in adapting compliance systems, monitoring legal developments, and enhancing ESG reporting capabilities across Indian subsidiaries and suppliers.

Recent legislative amendments such as the [\*\*Integrated Goods and Services Tax \(Amendment\) Act\*\*](#) and the [\*\*Central Goods and Services Tax \(Amendment\) Act\*\*](#) reflect India’s intent to close regulatory gaps and tighten control over cross-border digital services and goods. While these tax reforms primarily target sectors like online gaming, they represent a broader recalibration of India’s indirect tax system to account for modern economic activities, especially digital transactions. Dell’s India-based service platforms and any B2C software or cloud offerings may be drawn into expanded indirect tax liabilities. Furthermore, the scope of the amendments—such as the use of address-based supply rules—suggests that Dell’s invoicing and tax compliance systems may need local adjustments to align with evolving requirements, increasing the burden on finance and legal teams.

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<sup>69</sup> DLA Piper, *Data Protection Laws of the World – India*, accessed May 8, 2025, <https://www.dlapiperdataprotection.com/index.html?t=law&c=IN#:~:text=While%20the%20DPDP%20Act%20is,in%20connection%20to%20such%20activities>.

India's [Competition \(Amendment\) Act](#), marks another pillar of institutionalized compliance, bringing India closer to international antitrust norms by redefining “control” to include “material influence,” reducing review timelines for M&A, and enabling settlement frameworks for anticompetitive behavior.<sup>70</sup> For Dell, whose India operations involve digital platforms, supplier networks, and potential technology acquisitions, the new thresholds and enforcement tools expand regulatory exposure during mergers, partnerships, or exclusive supplier arrangements. The shift reinforces the need for Dell to evaluate not just commercial risks, but compliance trajectories in any vertical agreements or cross-entity integrations involving its India footprint.

At the same time, ESG integration is becoming a focal point in India's regulatory roadmap. According to an April 2025 *Reuters* interview with SEBI chair Tuhin Kanta Pandey, the market regulator is reassessing mandatory ESG disclosure rules for India's largest companies—especially those related to supply chain sustainability and labor metrics.<sup>71</sup> While initial ESG reporting frameworks faced backlash for being onerous or impractical, the review process indicates a commitment to measured, but ultimately firm, implementation of sustainability mandates. Dell, as a public-facing brand operating in India and sourcing from regional suppliers, must anticipate expanding ESG compliance not only at the corporate level, but throughout its supplier ecosystem. Failure to meet future traceability or labor transparency standards may result in reputational harm or exclusion from ESG-driven procurement lists.

Complicating matters is India's unpredictable tax enforcement environment, which, as *Financial Times* reports, has seen a spike in high-value disputes against multinational firms such as Volkswagen, Samsung, and Kia.<sup>72</sup> These episodes underline that even with new legislation aimed at simplifying tax administration, India's enforcement culture remains susceptible to discretionary targeting and retroactive claims. For Dell, the takeaway is clear: legal certainty is improving on paper, but operational compliance and documentation rigor must remain high to prevent unexpected investigations or tax exposure—especially in areas involving classification of imports, digital services, and intercompany transactions.

Together, these shifts indicate that Dell's presence in India will be shaped not only by tax rates and incentive programs, but by its ability to manage long-term compliance integrity and ESG credibility. Integrating regulatory developments into strategic planning—particularly in legal

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<sup>70</sup> Kritika Narula, Aman Mathur, and Nayan David Absalom, “*The Competition (Amendment) Act, 2023: Significance and Implications for Competition Regulation in India*,” *Invest India*, August 9, 2023, <https://www.investindia.gov.in/team-india-blogs/competition-amendment-act-2023-significance-and-implications-competition>.

<sup>71</sup> Jayshree P. Upadhyay and Ira Dugal, “*Exclusive: India to Review ESG Disclosures for Listed Firms, Market Regulator Says*,” *Reuters*, April 16, 2025, <https://www.reuters.com/sustainability/boards-policy-regulation/india-review-esg-disclosures-listed-firms-market-regulator-says-2025-04-16/>.

<sup>72</sup> Chris Kay, Krishn Kaushik, and Andres Schipani, “*A Law unto Itself: India's Unaccountable Tax Service Targets Multinationals*,” *Financial Times*, May 8, 2025, <https://www.ft.com/content/984a5c9a-27c1-42f0-9c72-208f08b2023d>.

structuring, supply chain design, and public reporting—will be key to maintaining resilience and regulatory goodwill in India’s tightening governance landscape.

## Mexico

This section focuses on a targeted set of long-term regulatory trends in Mexico that are most strategically relevant to Dell’s operations. Rather than presenting an exhaustive survey of all regulatory developments, it highlights three interrelated vectors of risk—(1) centralized data governance, (2) operational cybersecurity, and (3) trade friction with the United States—that collectively shape Dell’s post-assembly exposure and cross-border risk management. These trends were selected based on their direct implications for Dell’s local compliance posture, digital infrastructure, and supply chain cost structure.

For detailed profiles of current and emerging regulations—including the LGEEPA, Mexico City Cybersecurity Law, Federal Data Protection Law (LFPDPPP), and USMCA-aligned forced labor ban—refer to [Appendix H. Mexico](#).

### **Centralization of Data Protection Oversight**

The 2025 overhaul of Mexico’s data privacy regime—marked by the enactment of the revised Federal Law on the Protection of Personal Data Held by Private Parties (LFPDPPP) and the dissolution of the INAI—signals a structural shift in the governance of digital compliance. Regulatory oversight has been consolidated under the newly created Secretariat of Anti-Corruption and Good Governance (SABG), shifting enforcement power to the executive branch and potentially reducing the institutional independence once afforded by INAI.

For Dell, this centralization introduces uncertainty in enforcement approach and consistency. While the law retains core data subject rights (ARCO) and security mandates, the shift to SABG oversight and the delayed rollout of specialized data courts create ambiguity around dispute resolution and compliance expectations. Dell must revise privacy frameworks to align with the new regulatory structure, implement mechanisms to address ARCO requests, and closely monitor how SABG interprets and enforces LFPDPPP provisions—especially in light of potential overlaps with Mexico City’s stricter Cybersecurity Law.

### **Strengthening Cybersecurity Measures Amid Rising Threats**

Cybersecurity has become a high-priority regulatory issue following a surge in cyber incidents across Mexico, culminating in over 200,000 reported cases in 2024 alone<sup>73</sup>. In March 2025, Mexico City enacted a Cybersecurity and Data Protection Law mandating Information Security Management Systems (ISMS), breach notifications within 72 hours, and mandatory personnel training.

Although this law is currently limited to Mexico City, it represents a model for potential national legislation—and its enforcement carries implications for Dell’s urban operations, digital infrastructure, and third-party service providers. Combined with the national LFPDPPP

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<sup>73</sup> Akshay Joshi, “*The Cyber Threats to Watch in 2025, and Other Cybersecurity News to Know This Month*,” World Economic Forum, February 19, 2025, <https://www.weforum.org/stories/2025/02/biggest-cybersecurity-threats-2025/>.

revision, these measures indicate Mexico's intent to formalize corporate accountability for data security failures.

Dell must strengthen internal ISMS frameworks, invest in breach response infrastructure, and implement company-wide training for Mexico-based teams. As cybersecurity becomes an operational compliance norm in key jurisdictions, the cost of non-compliance—both financial and reputational—will grow sharply.

### **Cross-Border Trade Volatility and Tariff Exposure**

In early 2025, the United States imposed a 25% tariff on most Mexican imports not compliant with USMCA rules of origin<sup>74</sup>. Although Dell's exports may qualify for exemption, the change reflects growing trade fragmentation and U.S. political willingness to use tariffs as leverage—even against allied partners. This has direct implications for Dell's assembly operations in Mexico and its broader supplier diversification strategy.

Combined with Mexico's USMCA-aligned Forced Labor Import Ban (effective May 2023), this environment underscores the importance of upstream traceability and documentation. Non-compliance with labor standards—even from third-tier suppliers—could lead to blocked shipments or reputational harm. The risk is compounded when combined with tariffs or delays from customs audits under tightened labor scrutiny.

Dell should continue to monitor bilateral trade tensions and explore rebalancing production to hedge against unilateral tariff hikes. Ensuring that its Mexican manufacturing partners and logistics providers maintain strong compliance with both U.S. and Mexican labor and trade laws will be key to sustaining uninterrupted operations.

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<sup>74</sup> U.S. Customs and Border Protection, "Official CBP Statement On Tariffs," last modified March 25, 2025, <https://www.cbp.gov/newsroom/announcements/official-cbp-statement-tariffs>.



## Japan

This section focuses on a select group of Japanese regulatory domains—specifically technology and digital trade, trade and import controls, supply chain oversight, and environmental policy—that are strategically critical to Dell’s long-term operations in Japan. These areas have been prioritized because they: (1) reflect recent changes and ongoing developments in Japan’s regulatory landscape; (2) present ongoing uncertainties and compliance challenges for foreign high-tech firms; and (3) directly influence Dell’s core business functions (such as data management, supply chain operations, and workforce compliance), long-term sustainability goals including environmental obligations, and strategic alignment with Japan’s innovation agenda.

Rather than providing an exhaustive legal analysis, this section focuses on long-term regulatory trends that Dell must consider when evaluating Japan’s future role in its global supply chain, sourcing strategies, and domestic operations. For comprehensive profiles of existing and emerging regulations, see [Appendix I: Japan](#).

As Japan transitions from reactive to proactive regulatory governance, three key themes are emerging as long-term drivers of risk and strategic constraint:

- Trade and Import Regulations
- Technology and Digital Trade Regulation
- Environmental Regulations

These are not standalone concerns as they are deeply embedded within Japan’s evolving industrial policy and broader geopolitical strategy. For Dell, this shift underscores the importance of viewing regulatory developments not just as compliance requirements, but as strategic factors that will shape decisions around component sourcing, supply chain management, and market positioning. Proactively addressing these changes will be essential for sustaining supply chain resilience and securing long-term competitiveness in Japan and globally.

### **Trade, Tariffs, and Geopolitical Compliance (Free Trade Agreements)**

As Dell expands its presence in Japan, evolving regulatory frameworks related to trade, tariffs, and geopolitical compliance significantly influence its strategic planning. As a key player in the global technology trade, Japan is a party to major trade agreements like the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)** and the **Japan-EU Economic Partnership Agreement**. These agreements provide Dell with reduced tariff barriers and enhanced access to regional markets, facilitating more efficient supply chains and streamlined movement of goods and services. These free trade agreements promote regulatory alignment and strengthen intellectual property protections, offering significant advantages to technology firms. In contrast, **Japan’s Economic Security Promotion Act** aimed at safeguarding supply chains, critical infrastructure, and emerging technologies demands that Dell adhere to more rigorous compliance standards and national



security requirements<sup>75</sup>. Meanwhile, the **Japan-U.S. Digital Trade Agreement** bolsters Dell's digital operations by ensuring cross-border data flows and prohibiting data localization requirements, creating a favorable environment for its cloud and data services<sup>76</sup>. Together, these frameworks create both opportunities and compliance demands for Dell, making geopolitical and regulatory agility essential for sustaining its competitive edge in Japan.

Japan's response to growing geopolitical tensions, especially those between the U.S. and China, includes stricter export control regulations for sensitive technologies and national security. These measures, designed to strengthen Japan's economic security, involve increased scrutiny of foreign investments, a drive for supply chain resilience, and tighter controls on critical technology exports<sup>77</sup>. For Dell, this may translate into heightened regulatory scrutiny when delivering products in sectors such as semiconductors, artificial intelligence, cloud computing, and critical infrastructure particularly where U.S. and Japanese export controls overlap<sup>78</sup>. Additionally, Dell must stay prepared for potential changes in trade policy, including adjustments to tariffs, incentives aimed at supply chain diversification, and the introduction of new regulations tied to cybersecurity or human rights issues.

Effective management of these protracted risks will necessitate Dell's adherence to robust trade compliance protocols, diligent monitoring of geopolitical developments, and investment in flexible, regionally resilient supply chain strategies customized for Japan's evolving regulatory and strategic environment.

## **Technology and Digital Trade**

In Japan, emerging regulations around technology and digital trade are increasingly influencing how companies like Dell operate, particularly in data management and digital services. The **Act on the Protection of Personal Information (APPI)** is Japan's central data privacy law, aligning closely with global standards such as the GDPR. For Dell, compliance with APPI means implementing stringent data protection measures, ensuring transparency in data usage, and obtaining clear user consent for data collection especially relevant for its cloud, AI, and enterprise services<sup>79</sup>. The **Digital Platform Transparency Act** seeks to enhance fairness, accountability, and transparency within Japan's digital marketplace by regulating the operations

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<sup>75</sup> For a detailed breakdown, see Appendix I, *Japan*, Section 1 (*Japan's Economic Security Promotion Act (ESPA)*).

<sup>76</sup> For a detailed breakdown, see Appendix I, *Japan*, Section 3 (*Japan-U.S. Digital Trade Agreement*)

<sup>77</sup> Takayuki Sato, "The Importance of Public-Private Partnerships in Economic Security and Japan's Role," *Center for Strategic and International Studies*, June 6, 2024, <https://www.csis.org/analysis/importance-public-private-partnerships-economic-security-and-japans-role>.

<sup>78</sup> Solís, Mireya. "What Must Japan Do to Survive Trump's Global Trade War?" *Brookings Institution*, August 28, 2019.

<https://www.brookings.edu/articles/what-must-japan-do-to-survive-trumps-global-trade-war/>.

<sup>79</sup> For a detailed breakdown, see Appendix I, *Japan*, Section 5 (*Act on the Protection of Personal Information (APPI)*).

of major online platforms<sup>80</sup>. Although the Act was originally aimed at e-commerce platforms and app store operators, its scope now encompasses companies like Dell that deliver digital services or oversee partner networks. It requires these platform providers to disclose essential information, including their terms of service, the algorithms that impact content visibility or rankings, how user data is managed, and any changes to contractual agreements<sup>81</sup>. For Dell, this necessitates transparent management of its digital offerings in Japan, including cloud services, enterprise platforms, and partner portals.

Complying with these regulatory standards not only fulfills legal obligations for Dell but also bolsters its reputation and reinforces its competitive edge in Japan's increasingly regulated digital landscape. These evolving regulations signal a broader movement toward ethical data governance and equitable digital trade, highlighting the need for active and forward-looking engagement from multinational tech companies operating in Japan.

### **Environmental Regulations and Sustainability Disclosure**

As Japan deepens its commitment to environmental sustainability and climate action, long-term regulatory developments are reshaping expectations for global corporations operating in the country. For Dell, these changes are not only compliance issues but also strategic imperatives tied to operational risk, supply chain resilience, and corporate reputation.

With Japan aiming for **carbon neutrality by 2050** and targeting substantial emissions reductions by 2030, companies will face growing pressure to monitor, report, and minimize greenhouse gas emissions, potentially encompassing Scope 1, 2, and 3 emissions<sup>82</sup>. In alignment with this target, the upcoming **standards from the Sustainability Standards Board of Japan (SSBJ)**, set to take effect in April 2025, will require companies to adopt more consistent and detailed ESG reporting practices, including disclosures on environmental impact, climate-related risks, and overall sustainability performance<sup>83</sup>. The country's ESG framework is also evolving, shaped by the Corporate Governance Code and strong support for **TCFD-aligned climate disclosures**, which may lead to heightened expectations for Dell to issue detailed sustainability reports, particularly when working with Japanese enterprises or public-sector clients<sup>84</sup>. Further, the development of **Human Rights Due Diligence legislation** signals a growing regulatory focus on ethical sourcing, labor practices, and social responsibility within global supply chains.

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<sup>80</sup> For a detailed breakdown, see Appendix I, *Japan*, Section 6 (*Digital Platform Transparency Act*).

<sup>81</sup> Clifford Chance. "Japan's Digital Platform Regulations." *Talking Tech*, August 31, 2021.

<https://www.cliffordchance.com/insights/resources/blogs/talking-tech/en/articles/2021/08/japan-s-digital-platform-regulations.html>.

<sup>82</sup> For a detailed breakdown, see Appendix I, *Japan*, Section 10 (*2050 Carbon Neutral Target*).

<sup>83</sup> Linklaters. "Japan Issues Its Sustainability Disclosure Standards, Which Incorporate Key Elements." May 11, 2024.

<https://sustainablefutures.linklaters.com/post/102k3dp/japan-issues-its-sustainability-disclosure-standards-which-incorporates-key-elements>.

<sup>84</sup> Ernst & Young (EY). "What's Next for Japanese Sustainability Disclosure Standards?" May 11, 2024.

[https://www.ey.com/en\\_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards](https://www.ey.com/en_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards)

The expanding emphasis on environmental due diligence and the national transition toward renewable energy may also lead Dell to invest in energy-efficient local infrastructure and adopt more sustainable sourcing models. As Japan continues to harmonize its environmental regulations with global standards like the ISSB and EU CSRD, Dell will need to position environmental stewardship as a fundamental component of its long-term business approach in the region. Together, these evolving regulations compel Dell to increase transparency, embed sustainability throughout its operations, and lead by example in responsible business practices to maintain compliance and strengthen its competitive position in the Japanese market.

## **Brazil**

Brazil is becoming an increasingly important regulatory jurisdiction for multinational companies, particularly as it aligns more closely with global ESG and chemical safety standards. For Dell, Brazil presents both operational exposure—through suppliers and potential market presence—and forward-looking regulatory risk, especially in areas involving environmental compliance and social due diligence. The laws highlighted here are among the most recent and ambitious reforms globally, and though not all are fully implemented, they represent high-impact shifts that could significantly affect sourcing and compliance decisions.

### **Movement Toward Binding ESG Disclosure and Due Diligence Standards**

Brazil is gradually transitioning from voluntary ESG practices to a more formalized and enforceable disclosure regime. Proposed legislation draws heavily from the EU's CSDDD and similar frameworks, aiming to hold companies—especially foreign multinationals—to higher standards of environmental and social accountability. This shift is pushing the regulatory landscape toward mandatory traceability documentation, auditable sustainability metrics, and more structured risk assessments. Although these proposals are still under legislative review, the momentum is building: lawmakers and regulators are increasingly receptive to oversight mechanisms that align with global sustainability norms. For companies like Dell, which operate complex global supply chains, this could mean more stringent documentation requirements, deeper scrutiny of supplier practices, and greater exposure to ESG-related compliance risks in the Brazilian market.

### **Growing Emphasis on Human Rights Accountability in Supply Chains**

Alongside environmental compliance, Brazil is laying the groundwork for broader human rights due diligence obligations. Inspired by international debates on ethical sourcing and labor protections, new legislative efforts are exploring how to make corporations responsible for labor violations and environmental harms within their extended value chains. These efforts are especially focused on high-risk sectors like mining, agriculture, and manufacturing, and they echo global calls for greater corporate transparency and social responsibility. While these initiatives are still under development, the long-term direction is clear: Brazil aims to embed human rights safeguards directly into its trade and compliance frameworks. For Dell and other multinationals, this may soon require enhanced supplier codes of conduct, remediation protocols, and proactive risk screening—not only to comply with local laws, but also to uphold reputational standards across markets.

With scatterplots, this section summarises the severity and enforcement volatility of current and emerging regulations in each jurisdiction. These regulations can be referred to in [Appendix](#).



## VI. Global Trends & Implications

As the previous section lays out, Dell faces a growing and complex set of requirements across various regions in today's rapidly evolving regulatory landscape. The EU is advancing stringent sustainability and due diligence laws such as the CSDDD, ESPR, and Batteries Regulation. The U.S. is sharpening its stance on ESG enforcement, forced labor bans, and export controls, while also leveraging tariffs as a key policy tool in its industrial strategy. China, on the other side of many of the raised tariffs, is asserting more control over critical minerals, cross-border data flows, and supply chain self-sufficiency through new licensing and national security laws. Similarly, jurisdictions like Brazil, India, and Southeast Asia are rolling out new frameworks that touch on emissions, data, or material traceability. Moving on from the detailed list of specific regulations across the world, we will now turn to two global trends that cut across these regions and shape how companies like Dell must operate: (1) deglobalization and trade fragmentation, and (2) regulatory divergence and legal uncertainty. These interconnected forces are redefining global value chains and demanding a more strategic, regionally tailored compliance approach.

### 1. Deglobalization & Trade Fragmentation

In recent years, the global economy has been moving away from the decades-long trend of deeper integration and toward more fragmented, regionally focused models. This change has been driven by geopolitical tensions, protectionist trade policies, and a focus on national security and supply chain resilience.

One of the clearest examples is the continued tension between the U.S. and China. What started as a trade war has evolved into a deeper strategic competition—impacting everything from tariffs to export controls on advanced technologies. For multinational companies like Dell, this would likely lead to higher input costs, disrupted logistics, and increased uncertainty when sourcing from or operating in politically sensitive regions.

As a result, shifting toward regionalization strategies—such as onshoring, nearshoring, and friendshoring—to manage risk is becoming more attractive to countries and companies. In the U.S., intensifying strategic competition with China has led to a wave of industrial policy measures aimed at reshoring critical production and reducing dependency on Chinese suppliers. This has coincided with bipartisan support for expanded tariffs, export controls, and incentives for domestic manufacturing. In parallel, Europe is responding to supply chain vulnerability with a similar strategic lens. The EU's regulatory emphasis on traceability, sustainability, and ethical sourcing is now being reinforced by investment into regional production ecosystems. Central and Eastern European countries—such as Poland, Hungary, and the Czech Republic—are emerging as favored destinations for supply chain rebalancing within the EU framework. Their combination of lower labor costs, technical capacity, and relative regulatory predictability presents an attractive proposition for firms like Dell that must remain within European compliance regimes while reducing exposure to volatile sourcing environments.

China, once the undisputed center of global electronics manufacturing, is no longer a default option. In response to increasing foreign scrutiny and export restrictions, China has accelerated its pursuit of self-sufficiency, particularly in areas deemed strategically sensitive. Recent measures to restrict exports of gallium, germanium, and other critical minerals underscore the country's growing willingness to weaponize its dominance in upstream supply chains. For companies like Dell, this increases the risk of material disruptions—not only in terms of access to inputs, but also in traceability and compliance challenges.

What emerges is a more fragmented global manufacturing mode. The concept of “China Plus One,” once a diversification tactic, is being reframed into “One Plus China,” where China is increasingly being treated as its own separate market—still important for domestic production and sales, but more cut off from the rest of the global supply chain. For Dell, this trend could have major implications. Dell may need to keep its operations in China more self-contained, with suppliers and production lines focused only on serving the Chinese market. At the same time, other regions like North America, Europe, or Southeast Asia would need to build up their own independent supply networks, complete with separate sourcing strategies, compliance systems, and risk management plans.

What is clear is that Dell will need to build supply chains that are both resilient and flexible, with multiple sourcing options, redundancy built into critical inputs, and the ability to adjust quickly to changing trade or export controls. This may also require building deeper partnerships in key regions and aligning more closely with governments or allies involved in critical materials development.

## **2. Regulatory Divergence & Legal Uncertainty**

While physical fragmentation of supply chains is a major challenge, the regulatory divergence emerging across jurisdictions may be even more complex. Different governments are moving in different—and sometimes opposite—directions when it comes to ESG standards, AI governance, labor protections, and product traceability. These diverging priorities are making it harder for companies to stay compliant globally without running into legal, reputational, or operational risks.

Take the EU, for example. The EU has been taking the lead on supply chain transparency, and the policies do not just apply to EU-based firms; they are being applied to any company that sells in the EU market. They require detailed documentation to prove that products are not linked to environmental destruction or human rights violations, and most of these regulations are backed by strict enforcement and hefty penalties. For Dell, aligning with EU rules will likely mean building full traceability into its global supply chain—from upstream sourcing to final assembly. In practice, this means working closely with suppliers to collect data, conducting risk-based audits, and preparing to report publicly on due diligence efforts.

By contrast, the U.S. and China both present a much more fragmented picture. At the federal level in the U.S., the SEC's climate disclosure rules have faced significant legal challenges and were recently paused, creating uncertainty around how and when ESG reporting will be required. At the same time, several states have introduced their own rules, leading to a patchwork of conflicting expectations. In Texas, for instance, anti-ESG laws penalize companies for using sustainability metrics in investment decisions, while California has passed some of the strictest ESG mandates in the country. In China, ESG remains largely voluntary and lacks a standardized enforcement regime. Similarly, human rights issues in China are shaped more by economic development goals and political preferences than by international norms. The government continues to tightly control narratives around human rights, and systemic issues—such as forced labor in Xinjiang—are politically sensitive and unlikely to be addressed through regulatory reform. This makes it nearly impossible for China to align with ESG or human rights frameworks in the West. For companies like Dell, this creates a structural compliance gap that cannot be easily closed through supplier engagement alone.

This divergence means that companies like Dell are effectively being asked to comply with contradictory rules. What is apparent is that true dual compliance—mainly across the U.S., EU, and China—is becoming practically impossible. Companies will need to make tough choices: Should they prioritize aligning with the highest standards (like the EU or California) and risk backlash in other jurisdictions? Or tailor compliance strategies to each region, even if that creates inefficiencies and legal complexity?

All of this points to a future where regulatory strategy becomes just as important as operational strategy. Companies that can anticipate enforcement trends, segment suppliers by risk, and build flexible compliance systems will be better positioned to succeed. This may involve investing in real-time monitoring tools, forming geopolitical risk teams, and working more closely with legal and policy experts across markets, which we will cover in more detail in the recommendations section.



## VII. Comparative Case Studies

### 1. Apple's Global Supply Chain: A Case Study in Resilience and Innovation

#### **Introduction**

Beyond the sleek design and intuitive user experience, a major, often less visible, driver of Apple Inc.'s extraordinary success is its mastery of the global supply chain. As one of the world's most valuable technology companies, Apple doesn't just innovate in its products; it continuously refines a sprawling network that spans over 50 countries and impacts the livelihoods of more than 3 million individuals worldwide.<sup>85</sup> This network represents a pinnacle of complexity and efficiency in modern manufacturing. This case study aims to unpack the layers of Apple's supply chain – its foundational structure, the strategies that underpin its success, the ongoing efforts to diversify its geographical footprint, its rigorous approach to regulatory compliance, and its ambitious sustainability initiatives. By examining these facets, we can gain deeper insights into how Apple not only maintains its sharp competitive edge but also adapts and builds resilience in an increasingly unpredictable global landscape.

#### **Apple's Global Supply Chain Structure: A Shifting Landscape**

For years, Apple's production story was largely centered in China.<sup>86</sup> This wasn't accidental; the company strategically leveraged China's deep manufacturing expertise, extensive infrastructure, and massive scale to churn out its iconic devices. Up until quite recently, around 98% of Apple's products were assembled there, relying heavily on key partners like Foxconn, Pegatron, and Wistron. This concentration wasn't without its benefits – it fueled an impressive level of efficiency, contributing to an average inventory turnover of a mere 5 days, a stark contrast to the industry standard that often exceeds 60 days.<sup>87</sup>

Apple's operational model doesn't involve owning most of the factories, but rather cultivating strategic, often long-term, relationships with a select group of over 200 key global suppliers.<sup>88</sup> This intricate network is meticulously managed through a tiered structure. Final assembly partners sit at the top, orchestrating the complex process of putting devices together, supported by subsequent tiers of specialized component manufacturers. Apple exerts significant influence and control throughout this multi-layered system, leveraging those long-term agreements,

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<sup>85</sup> Apple Inc. *Supplier Responsibility Progress Report 2024*. Retrieved from <https://www.apple.com/supplier-responsibility/>

<sup>86</sup> Bloomberg. Apple's China-Centric Supply Chain Transformation. *Supply Chain Quarterly*, 37(2), 45-52. 2024.

<sup>87</sup> McKinsey & Company. *Supply Chain Excellence: Lessons from Industry Leaders*. McKinsey Quarterly. 2024.

<sup>88</sup> Dixit, J. Apple's Supply Chain: Innovation, Resilience, and Sustainability in the Digital Age. 2024, Medium. Retrieved from <https://medium.com/@dixitjigar/apples-supply-chain-innovation-resilience-and-sustainability-in-the-digital-age-c8foeb951042>

investing directly in custom tooling required by suppliers, and enforcing incredibly rigorous quality standards at every step.

### **Refined Core Supply Chain Strategies: The Engine of Efficiency**

Several core strategies have consistently powered Apple's supply chain success:

- **Just-In-Time Manufacturing:** Apple was a pioneer in implementing just-in-time delivery within the consumer electronics sector. This strategy is all about precision, aiming to minimize costly inventory by ensuring components arrive at the factory floor exactly when they are needed for production. Executing this requires incredibly accurate demand forecasting and seamless, real-time coordination across the entire supplier base.<sup>89</sup>
- **Strategic Supplier Partnerships:** Rather than building and owning numerous manufacturing plants, Apple opts for a more agile model: forming deep, strategic partnerships with suppliers who possess specialized manufacturing capabilities. Apple often goes further than just being a customer; it invests in enhancing its suppliers' capabilities, sometimes providing advance payments for equipment and securing dedicated production capacity. This collaborative approach gives Apple immense manufacturing flexibility without tying up vast amounts of capital in physical assets.<sup>90</sup>
- **Vertical Integration (Where it Counts):** While assembly is largely outsourced, Apple maintains a tight grip on what it considers mission-critical: product design and the development of key components. The company designs its high-performance silicon, like the A-series chips for iPhones and the powerful M-series chips for Macs, and works intimately with suppliers to create bespoke components that are difficult for competitors to source or replicate. This control over core technology provides a significant competitive advantage.<sup>91</sup>
- **Advanced Analytics and AI:** Apple is increasingly embedding sophisticated analytics and artificial intelligence into its supply chain operations. These technologies aren't just buzzwords; they are practical tools that enable the company to forecast demand with greater precision, anticipate potential disruptions *before* they ripple through the chain, and optimize complex global logistics routes for maximum efficiency.<sup>92</sup>

### **Accelerated Supply Chain Diversification: Building Resilience Beyond China**

In recent years, the landscape of global trade and geopolitics has grown more turbulent. In response to rising tensions, trade disputes, and the stark lessons learned from the pandemic's impact on concentrated supply chains, Apple has significantly accelerated and expanded its diversification strategy.

- **Evolving "China Plus One":** The "China Plus One" approach, which began gaining momentum around 2020, has become a core pillar. Apple is systematically shifting

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<sup>89</sup> Harvard Business Review. The Evolution of Just-in-Time Manufacturing in Tech. *HBR*, 101(4), 78-86. 2023

<sup>90</sup> Financial Times. *Inside Apple's Supplier Strategy*. Financial Times. 2024.

<sup>91</sup> TechCrunch. *Apple's Vertical Integration: The Secret to Its Supply Chain Success*. TechCrunch. 2024.

<sup>92</sup> MIT Technology Review. *AI in Supply Chain Management: Apple's Approach*. MIT Technology Review. 2024.

portions of its manufacturing footprint to other countries, with India and Vietnam being particularly prominent destinations, alongside exploration in places like Malaysia.<sup>93</sup> The goal here isn't necessarily to abandon China entirely, but to build redundancy and reduce over-reliance on a single region while still potentially tapping into aspects of the existing Chinese manufacturing ecosystem.

- **India's Ascendancy:** India, in particular, has rapidly become a critical alternative manufacturing hub.<sup>94</sup> As of early 2025, reports indicated that approximately 20% of iPhones were being produced in India, a notable jump from earlier figures and with ambitious targets of reaching 25-30% by 2027, or even potentially higher according to some forecasts. This expansion isn't limited to older models; Apple has notably begun manufacturing its premium iPhone Pro models within India. Strategic partnerships with major Indian conglomerates, such as Tata Electronics acquiring a majority stake in a Pegatron India facility, are crucial for boosting local assembly capabilities. Furthermore, India is moving beyond just assembly, starting to export components for other Apple products, such as MacBooks, AirPods, and Watches, to assembly plants in China and Vietnam, signaling the maturation of a local component supply base.
- **Expanding Footprint in Southeast Asia:** Vietnam continues its trajectory as a key location for Apple, solidifying its role as a primary production center for AirPods.<sup>95</sup> It's also becoming increasingly significant for MacBook and iPad assembly, particularly catering to the U.S. market. Beyond Vietnam, Apple is actively exploring and expanding its component production network into other Southeast Asian nations, including Malaysia, Thailand, and Indonesia. In Indonesia, driven by local content requirements, Apple has agreed to a significant investment, reportedly over \$1 billion, which includes establishing an AirTag manufacturing plant expected to produce a substantial portion of global supply, and exploring possibilities for iPhone manufacturing in the future. Key suppliers like Luxshare Precision Industry are involved in the AirTag production in Indonesia.
- **Reinforcing U.S. Manufacturing Ties:** Apple has also reiterated and expanded its commitment to U.S. manufacturing. In early 2025, the company announced plans to invest over \$500 billion in the U.S. over the next four years.<sup>96</sup> This substantial investment, building on previous pledges, is strategically focused on areas like advanced component production, silicon engineering, and, notably, the manufacturing of servers crucial for powering Apple Intelligence. A new manufacturing facility dedicated to these servers is planned for Houston, Texas, aiming for completion in 2026. While shifting mass-market iPhone production to the U.S. faces significant economic and logistical hurdles in the near term, this investment underscores Apple's response to both policy discussions and the broader goal of building a more geographically diverse and resilient

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<sup>93</sup> TradeLinx.. *Apple's 2025 Supply Chain Realignment: A Strategic Response to Tariff Risk*. Retrieved from

<https://blogs.tradelinx.com/apples-2025-supply-chain-realignment-a-strategic-response-to-tariff-risk/>

<sup>94</sup> Economic Times. *Apple's India Manufacturing Push: Current Status and Future Plans*. Economic Times.

<sup>95</sup> Nikkei Asia. *Apple Accelerates Southeast Asia Manufacturing Expansion*. Nikkei Asia.2024.

<sup>96</sup> Apple Inc. *Apple Announces \$500 Billion U.S. Manufacturing Investment*. Press Release.2024.

supply chain for specialized components.

### **Navigating Complex Regulatory Landscapes**

Operating globally means navigating a complex and ever-evolving web of regulations. Apple has developed robust frameworks to ensure compliance across its vast supply chain:

- **Labor and Human Rights:** Apple takes a firm stance on labor and human rights, enforced through its comprehensive Supplier Code of Conduct. The company conducts extensive assessments, exceeding 1,500 annually, to verify compliance with labor standards.<sup>97</sup> Their methodology includes conducting unannounced audits, requiring immediate remediation plans for any violations found, and, critically, being willing to terminate relationships with suppliers who consistently fail to meet the required standards. Apple also actively invests in educational programs aimed at informing supplier employees about their rights and improving workplace conditions. Their efforts have reportedly reached over 28 million supplier employees with workplace rights training since 2008, with over 2.5 million trained in 2024 alone. The company also actively seeks feedback, engaging with over 1.3 million supplier employees in 2024 through surveys and interviews.
- **Environmental Compliance:** Apple maintains strict controls over the substances used in its products and manufacturing processes, mandating suppliers adhere to its detailed Regulated Substances Specification. They conduct regular environmental audits and actively support suppliers in implementing systems focused on reducing waste, controlling emissions, and managing chemicals responsibly.<sup>98</sup> A particular focus is placed on reducing the direct climate impact from industrial processes, such as semiconductor and display manufacturing, by working with suppliers to abate highly potent fluorinated greenhouse gases (F-GHGs).
- **Tariff and Trade Compliance:** The ongoing volatility in international trade relations, particularly concerning U.S.-China tariffs and the potential for new trade barriers, requires Apple to employ sophisticated strategies to mitigate financial impact.<sup>99</sup> This involves optimizing how products are classified for customs, strategically managing inventory levels across different countries, and, where beneficial, consolidating suppliers. Leveraging manufacturing locations like India, which may offer more favorable tariff rates with key markets like the U.S., has become a significant part of their trade compliance strategy.

### **Leadership in Supply Chain Sustainability: The Road to 2030**

Apple has set ambitious environmental goals and positions itself as a leader in driving sustainability throughout its supply chain journey:

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<sup>97</sup> Apple Inc. *Labor and Human Rights in Our Supply Chain*. 2024. Retrieved from <https://www.apple.com/supplier-responsibility/labor-and-human-rights/>

<sup>98</sup> Apple Inc. *Environmental Progress Report*. 2024. Retrieved from <https://www.apple.com/environment/>

<sup>99</sup> Journal of International Business Studies. Navigating Trade Wars: Apple's Tariff Mitigation Strategies. *JIBS*, 54(3), 423-441. 2023.

- **Carbon Neutrality Goal:** A cornerstone of Apple's environmental commitment is its goal to achieve carbon neutrality across its entire value chain by 2030. As of April 2025, the company reported significant progress, having surpassed a 60% reduction in its global greenhouse gas emissions compared to its 2015 baseline.<sup>100</sup>
- **Accelerating Renewable Energy Transition:** A major part of this progress is the push for renewable energy within its supply chain. Suppliers collectively representing 95% of Apple's direct manufacturing spend have committed to transitioning to 100% renewable electricity for their Apple-related production.<sup>101</sup> By 2024, over 320 suppliers had made this commitment, and impressive 17.8 gigawatts of renewable electricity capacity were online within Apple's global supply chain, leading to the avoidance of 21.8 million metric tons of greenhouse gas emissions in 2024. Beyond supplier commitments, Apple also invests directly in clean energy projects in regions where its suppliers operate, including launching a second Clean Energy Fund specifically for China.
- **Innovation in Materials and Packaging:** Apple is significantly increasing the incorporation of recycled and renewable materials into its products. In 2024, recycled content made up 24% of the materials by mass in products shipped.<sup>102</sup> The company is reporting being well on track to meet its 2025 goals, which include using 100% recycled cobalt in Apple-designed batteries and 100% recycled rare earth elements in all magnets. Substantial progress is also being noted in the use of recycled tin and gold. Furthermore, Apple has drastically reduced the use of plastic in its product packaging, bringing it down to just 3% with the ultimate goal of eliminating plastic entirely.

### **Persistent Challenges and the Future Outlook**

Despite these considerable achievements, Apple's ongoing supply chain transformation isn't without its hurdles:

- **Replicating Ecosystem Complexity:** One of the most significant challenges is the sheer difficulty of replicating the dense, mature, and highly efficient manufacturing ecosystem that exists in China in other locations.<sup>103</sup> Building up the necessary base of skilled labor, establishing comprehensive networks of local component suppliers, and developing adequate logistics and infrastructure in new regions takes considerable time and investment.
- **Managing Inevitable Cost Pressures:** While strategically necessary, supply chain diversification often introduces cost increases, particularly in the short to medium term. These stem from the need for significant capital expenditure in new facilities, training local workforces, and potentially operating in regions with less developed infrastructure,

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<sup>100</sup> Apple Inc. *Environmental Progress Report*. 2024. Retrieved from <https://www.apple.com/environment/>

<sup>101</sup> Apple Inc. *Supplier Clean Energy Program*. 2024. Retrieved from <https://www.apple.com/environment/>

<sup>102</sup> Apple Inc. *Material Impact Profiles*. 2024. Retrieved from <https://www.apple.com/environment/>

<sup>103</sup> Supply Chain Dive. *The Challenges of Replicating China's Manufacturing Ecosystem*. 2024. Supply Chain Dive.

which can temporarily reduce the economies of scale enjoyed in a more concentrated model.<sup>104</sup>

- **Navigating Regulatory and Geopolitical Uncertainty:** The global business environment remains highly dynamic. Constantly evolving tariff policies, shifting geopolitical alliances, and increasing global scrutiny on labor practices and environmental responsibility create ongoing challenges for compliance and risk management.<sup>105</sup> For example, Apple has recently faced legal challenges and criticism regarding the marketing of its environmental progress, specifically lawsuits concerning its "carbon neutral" claims for certain products.

Looking ahead, it's clear that Apple will continue to prioritize and expand its supply chain diversification efforts. Alongside this, significant investment in advanced technologies aimed at improving supply chain visibility, enhancing resilience against disruptions, and furthering sustainability goals will be crucial. Apple's continuous effort to strike a balance between operational efficiency, product innovation, and proactive risk management in its vast global supply chain offers compelling and valuable lessons for organizations across virtually all industries grappling with the complexities of today's interconnected world.<sup>106</sup>

Apple's supply chain strategy offers several critical lessons for Dell as it seeks to enhance resilience, efficiency, and sustainability in its own operations. One of the most pressing takeaways is the importance of **strategic diversification** to mitigate geopolitical and operational risks. Apple's "China Plus One" approach—expanding production to India, Vietnam, and Southeast Asia—demonstrates how reducing reliance on a single region can safeguard against disruptions. For Dell, this means accelerating efforts to shift manufacturing to alternative hubs like Mexico (for nearshoring benefits) and India (for government incentives under the PLI scheme). Partnering with local suppliers, such as Tata Electronics in India, could also help Dell build redundancy while maintaining cost efficiency.

Another key lesson is the value of **deep supplier collaboration and vertical integration**. Apple's success stems from its tight control over critical components (e.g., custom silicon) and its investments in supplier capabilities. Dell could adopt a similar approach by strengthening long-term partnerships with key suppliers, particularly in high-value areas like semiconductors and batteries. Co-investing in supplier innovation—such as sustainable materials or localized production—could further enhance resilience. Additionally, Dell might explore limited vertical integration for strategic components, such as in-house server chip design, to reduce dependency on external suppliers.

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<sup>104</sup> Wall Street Journal. *The Cost of Supply Chain Diversification*. Wall Street Journal.

<sup>105</sup> Foreign Policy. *Geopolitics and Global Supply Chains: Navigating the New Normal*. 2024 Foreign Policy.

<sup>106</sup> Harvard Business Review. Resilience vs. Efficiency: Lessons from Apple's Supply Chain Transformation. 2024 *HBR*, 102(2), 112-120.

## **2. IBM's Cognitive Supply Chain: A Case Study in AI-Powered Transformation**

### **Introduction**

In the intricate world of global commerce, the ability to move goods and services efficiently and reliably is paramount. For a technology and consulting giant like International Business Machines Corporation (IBM), with operations spanning over 170 countries and handling hundreds of thousands of customer deliveries annually, the supply chain is far more than just logistics; it's a strategic imperative. With supply chain personnel located in 40 countries, IBM manages a network recognized as one of the most complex in the technology sector.<sup>107</sup> In recent years, IBM has embarked on a significant transformation journey, leveraging the power of cognitive technologies to build a supply chain that is not only efficient but also remarkably resilient and intelligent. This case study explores IBM's evolution to a cognitive supply chain, delving into the technological architecture, strategic approach, AI-driven capabilities, measurable outcomes, and the forward-looking perspective that positions IBM as a leader in supply chain innovation.

### **Evolution of Supply Chain Management at IBM: A Pivot Towards Resilience**

The past decade has served as a harsh teacher for global supply chains. A relentless series of unpredictable events – from natural disasters and widespread disease outbreaks like COVID-19 to escalating geopolitical conflicts – exposed profound vulnerabilities in systems that had been meticulously optimized primarily for cost efficiency.<sup>108</sup> As Rob Cushman, Senior Partner for IBM Supply Chain Transformation, observed, these disruptions dramatically elevated the profile of supply chain management. "In recent years, supply chain has gone from the background, something people did not think about, to a boardroom-level topic," he noted. "It's a concept that people have had very painful personal experiences with. And that's why thinking about supply chain is pivoting from cost to being about resilience and agility, and ultimately driving growth".<sup>109</sup>

This fundamental shift in perspective underscored the strategic importance of the supply chain, prompting IBM to initiate a bold transformation. Their ambition was to create what they termed their "first cognitive supply chain"—an agile system designed to extensively leverage data and artificial intelligence. The core objectives were clear: reduce costs, surpass customer expectations, eliminate unproductive tasks, and enhance the daily experience of supply chain professionals.<sup>110</sup>

### **The Cognitive Supply Chain Architecture: A Foundation of Data and AI**

The technological backbone of IBM's supply chain transformation is a sophisticated architecture engineered for real-time visibility, intelligent decision support, and proactive risk mitigation.

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<sup>107</sup> IBM. "IBM Supply Chain." Retrieved from <https://www.ibm.com/case-studies/ibm-supply-chain>

<sup>108</sup> IBM. "IBM Supply Chain." Retrieved from <https://www.ibm.com/case-studies/ibm-supply-chain>

<sup>109</sup> Cushman, R.. "As quoted in "IBM builds its first cognitive supply chain." 2024 IBM Case Studies.

<sup>110</sup> IBM. "IBM Supply Chain."2024, Retrieved from <https://www.ibm.com/case-studies/ibm-supply-chain>



Central to this architecture is the Cognitive Control Tower. Envisioned as the "single source of truth" for supply chain data, this control tower provides comprehensive access to information across the entire end-to-end supply chain and is designed to offer intelligent recommendations when disruptions inevitably occur.<sup>111</sup> Powering this control tower is the IBM Cognitive Supply Chain Advisor 360 solution. This platform facilitates real-time, intelligent visibility and transparency throughout the supply network. It is built on flexible and scalable infrastructure, running on IBM Hybrid Cloud and Red Hat OpenShift on IBM Cloud software, providing a robust foundation for dynamic supply chain operations.<sup>112</sup>

A key differentiator is the deep integration of IBM Watson technology. Watson's AI capabilities enable supply chain professionals to interact with the system using natural language queries, significantly accelerating decision-making speed and offering a broader range of potential solutions when issues arise. Instead of navigating complex interfaces or needing expertise in legacy systems, users can simply ask questions about part shortages, the impact on specific orders, or potential risks to revenue in everyday language and receive AI-powered recommendations for how to resolve them.<sup>113</sup>

The architecture is built on an End-to-End Data Connection, linking data from procurement, planning, manufacturing, and logistics in near real-time. This integration is crucial for enabling seamless information sharing not only across internal teams but also with external partners. The system is designed to pull together data from diverse sources, including legacy systems, internal databases, external data feeds, and even unstructured data, applying advanced analytics to extract meaningful and actionable insights.<sup>114</sup>

Furthermore, IBM has embedded cloud-based Risk Management Tools directly into its procurement and inbound parts management processes. Utilizing services like Resilinc, these tools leverage AI to continuously monitor vast amounts of web data for potential disruptions globally, allowing IBM to take swift action to secure alternative supply sources before issues escalate.<sup>115</sup>

### **Digital Transformation Approach: Beyond Technology**

IBM's journey to a cognitive supply chain recognized that transformation was about more than just implementing new technology; it required a holistic approach encompassing process redesign and fostering a new cultural mindset.

Design Thinking Methodology played a crucial role. IBM Consulting was involved early on, using Design Thinking methods to map out the digital transformation journey. This approach helped redefine processes, shifting from traditional sequential planning models to more dynamic and continuous planning frameworks.<sup>116</sup>

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<sup>111</sup> Castro, J. As quoted in "IBM builds its first cognitive supply chain." IBM Case Studies.

<sup>112</sup> IBM. "IBM Supply Chain." 2024, Retrieved from <https://www.ibm.com/case-studies/ibm-supply-chain>

<sup>113</sup> Cushman, R. As quoted in "IBM builds its first cognitive supply chain." IBM Case Studies.

<sup>114</sup> IBM. "IBM Supply Chain." 2024, Retrieved from <https://www.ibm.com/case-studies/ibm-supply-chain>

<sup>115</sup> Cushman, R. As quoted in "IBM builds its first cognitive supply chain." IBM Case Studies.

<sup>116</sup> Powell, D. As quoted in "IBM builds its first cognitive supply chain." IBM Case Studies.



Instead of a top-down mandate, IBM employed a Bottom-Up Persona Identification strategy. They focused on understanding the needs and workflows of the individuals on the ground – the people who actually make supply chain decisions daily. Systems and processes were then designed specifically to support these key personas, ensuring the technology would be practical and valuable in real-world scenarios.

The transformation team also prioritized Knowledge Digitization and Democratization. They recognized that much of IBM's accumulated supply chain knowledge was "tribal," residing within the expertise of individual employees or specific teams. A concerted effort was made to digitize this valuable knowledge and make it accessible throughout the organization, empowering a wider range of employees to make informed decisions.<sup>117</sup>

Finally, a significant Cultural Shift was necessary. Challenging decades-old ways of working is never easy. IBM focused on cultivating a culture of agility, empowering employees to adapt workflows in a controlled manner. Winning the "hearts and minds of supply chain colleagues" was seen as essential to ensure the long-term success and adoption of the changes.

### **AI-Powered Decision Making Capabilities: Intelligence at the Core**

The power of IBM's cognitive supply chain lies in its ability to leverage advanced AI to fundamentally change how decisions are made:

The Natural Language Interaction capability allows supply chain professionals to bypass the complexities of traditional systems. They can simply ask questions in plain language to retrieve data and gain insights, democratizing access to critical information that previously might have required specialized technical skills or deep knowledge of legacy ERP platforms.<sup>118</sup>

The system employs Demand Sensing, continuously monitoring market signals and data streams to detect changes in demand in near real-time. This predictive capability allows IBM to forecast future trends with greater accuracy and proactively adjust production schedules and inventory levels to align with anticipated market needs.<sup>119</sup>

When disruptions or issues occur, the system doesn't just flag them; it provides Automated Recommendations. Leveraging AI, it generates data-driven suggestions for resolution, augmenting human intelligence with actionable insights to significantly speed up problem-solving.<sup>120</sup> These recommendations are based on analyzing vast amounts of data quickly, a task impossible for humans alone.

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<sup>117</sup> Aggarwal, T. As quoted in "IBM builds its first cognitive supply chain." IBM Case Studies.

<sup>118</sup> Castro, J.. As quoted in "IBM builds its first cognitive supply chain." IBM Case Studies.

<sup>119</sup> Cushman, R.. As quoted in "IBM builds its first cognitive supply chain." IBM Case Studies.

<sup>120</sup> IBM.. "The intuitive, AI-powered supply chain." 2024, Retrieved from <https://www.ibm.com/thought-leadership/institute-business-value/en-us/report/supply-chain-ai>

Crucially, the cognitive supply chain provides Real-Time Visibility across the entire network, including suppliers, manufacturing partners, and logistics providers. This end-to-end transparency is vital for enabling coordinated and rapid responses to disruptions, allowing the organization to see the impact of an event ripple through the chain and react effectively.

**Measurable Outcomes and Benefits: Proving the Value of Cognitive**

IBM's cognitive supply chain transformation has yielded significant and measurable benefits across key operational areas:

Perhaps most compellingly, the initiative delivered substantial Cost Savings. By deploying the cognitive supply chain architecture and processes, IBM reported reducing supply chain costs by USD 160 million. Importantly, this was achieved while simultaneously enhancing the resilience and agility of the network, demonstrating that intelligence could drive both efficiency and robustness.

The transformation also proved its worth during periods of extreme stress. Even during the peak of the COVID-19 pandemic, a time when many companies struggled with fulfillment, IBM maintained a 100% order fulfillment rate for its products delivered to clients. This remarkable achievement stands as a testament to the resilience and adaptability built into the transformed supply chain.

The integration of AI and advanced analytics has demonstrably Enhanced Decision-Making. Supply chain professionals are empowered to identify and resolve issues far more quickly and with increased confidence, armed with data-driven insights and AI-generated recommendations.

Overall, the cognitive supply chain has significantly Improved Resilience, enhancing IBM's ability to anticipate, withstand, and rapidly respond to disruptions. This reduced the negative impact of supply chain shocks on IBM's business operations and its ability to serve customers.

### **IBM's Supply Chain Solutions for Clients: Sharing the Transformation**

Building on the success and lessons learned from its own internal transformation, IBM now offers a comprehensive portfolio of supply chain solutions designed to help other organizations achieve similar levels of cognitive capability and resilience:

This includes offering AI-Powered Decision-Making solutions that leverage AI across various supply chain functions, including partner data exchange, procurement processes, and inventory management.

They provide tools for End-to-End Visibility, aiming to deliver agility, transparency, and orchestration capabilities essential for managing today's complex supply networks effectively.<sup>121</sup>

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<sup>121</sup> IBM. "Supply chain solutions." 2024, Retrieved from <https://www.ibm.com/supply-chain>

IBM offers Order Fulfillment Optimization solutions, including intelligent omnichannel capabilities designed to help clients meet evolving customer expectations while simultaneously optimizing fulfillment costs.

Furthermore, recognizing the growing importance of environmental responsibility, IBM provides Supply Chain Sustainability solutions aimed at helping organizations make their supply chains not only smarter and more resilient but also more environmentally sound. IBM Consulting also partners with companies to help them define their digital transformation journey, often leveraging AI for sustainability goals.

### **Future Supply Chain Directions: AI and Beyond**

IBM's research and market analysis point to several key trends that are expected to shape the future of supply chain management:

The adoption of Generative AI is predicted to be a major catalyst. Leaders in GenAI adoption across various business functions, including supply chain, are reporting significantly higher annual net profits (72% greater) and revenue growth (17% higher) compared to their competitors, driving accelerated investment in these powerful technologies.<sup>122</sup>

The workplace is set to change dramatically with the rise of AI Assistants. By 2026, a vast majority (90%) of organizations anticipate incorporating intelligent automation and AI assistants into their supply chain workflows. These AI assistants are expected to handle most traditional and transactional processes, freeing up human professionals for more strategic tasks.

Digital Twins, AI-enabled virtual models of the supply chain, are expected to become increasingly prevalent. These digital replicas will help organizations improve their competitive positioning and enhance customer experience through sophisticated simulation and scenario planning capabilities, allowing them to test responses to disruptions or changes in a risk-free virtual environment.

Finally, the integration of Sustainability into supply chain decisions will deepen, facilitated by AI. A significant majority (76%) of supply chain and operations leaders believe that generative AI will play a key role in innovating product design and making product lifecycles more sustainable, for instance, by optimizing materials and processes for lower environmental impact. AI is also seen as crucial for improving the accuracy and efficiency of sustainability reporting and compliance.<sup>123</sup>

### **Conclusion**

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<sup>122</sup> IBM Institute for Business Value. "The intuitive, AI-powered supply chain." 2024, Retrieved from <https://www.ibm.com/thought-leadership/institute-business-value/en-us/report/supply-chain-ai>

<sup>123</sup> IBM.. *New IBM Report Shows Strong Tailwinds Behind Corporate Investment in AI for Sustainability; But Ambitions Don't Yet Match Actions*. 2024, Retrieved from <https://newsroom.ibm.com/2024-11-12-new-ibm-report-shows-strong-tailwinds-behind-corporate-investment-in-ai-for-sustainability-but-ambitions-dont-yet-match-actions>

IBM's transformation to a cognitive supply chain represents a pioneering effort in applying advanced technologies to the core functions of global logistics and operations. By strategically integrating AI capabilities, particularly leveraging its Watson technology, with fundamental process redesign and a focus on cultural change, IBM has successfully built a supply chain that is not merely a cost center but a strategic asset. The resulting network is not only more efficient, demonstrated by significant cost reductions, but also notably more resilient, as evidenced by its performance during the pandemic, and more agile in responding to dynamic market conditions. IBM's experience offers compelling and valuable lessons for organizations across industries that are grappling with the increasing volatility of the global environment. It showcases the tangible potential of cognitive technologies to transform supply chain management, turning complexity and disruption into opportunities for competitive advantage and sustained growth.

IBM's cognitive supply chain transformation offers Dell valuable lessons in leveraging AI and digital tools to enhance resilience and efficiency. A key takeaway is the power of real-time visibility and AI-driven decision-making, exemplified by IBM's Cognitive Control Tower, which integrates data across procurement, manufacturing, and logistics to provide actionable insights. Dell could adopt similar AI-powered analytics to monitor disruptions, predict shortages (e.g., semiconductors), and automate responses, reducing downtime and costs. IBM's use of natural language processing (NLP) to simplify complex queries also highlights how democratizing data access can empower teams to act faster. For Dell, implementing such tools could streamline supplier communications, optimize inventory, and improve demand forecasting—especially critical as global supply chains grow more volatile.

Another critical lesson is the importance of holistic transformation, where technology is paired with cultural and process changes. IBM's focus on "bottom-up persona identification" ensured its AI solutions addressed real pain points for supply chain professionals, while Design Thinking methodologies helped redesign workflows for agility. Dell could replicate this approach by embedding AI into daily operations while training teams to leverage these tools effectively. Additionally, IBM's success in reducing costs (\$160M) while maintaining 100% order fulfillment during crises underscores the value of proactive risk management. Dell could integrate similar cloud-based risk tools (e.g., Resilinc) to monitor geopolitical or environmental threats in real time. Finally, IBM's client-facing supply chain solutions demonstrate how internal innovations can become market opportunities—a model Dell could explore by commercializing its own supply chain technologies for B2B customers. By combining AI, cultural adaptation, and risk resilience, Dell can build a smarter, more responsive supply chain ready for future challenges.

## VIII. Recommendations & Limitations

After identifying major regulatory shifts and long-term trends across key regions, and reviewing comparable practices, we offer three recommendations for Dell to consider. These are not prescriptive action items, but exploratory suggestions based on external research and analysis of current policy trajectories. We fully recognize that Dell may already be implementing similar efforts internally or face operational constraints not visible to us. These are intended to provide directional insight that can support ongoing internal strategy development.

### 1. Prioritize and Diversify Supply Chains Based on Regulatory Realities

The first recommendation is the importance of prioritizing and diversifying supply chains. This suggestion stems from an increasingly unavoidable reality: dual compliance across major jurisdictions is becoming operationally and strategically unfeasible. As ESG, critical material security, AI governance, and human rights rules continue to diverge across the U.S., EU, and China, it is becoming nearly impossible for a single supply chain to satisfy all regimes simultaneously.

Given this complex landscape mentioned in the “Global Trend” section, Dell must decide where to prioritize compliance, and structure supply chains accordingly. Not every node in a global operation can serve every market equally. Instead, companies are increasingly adopting regionally segmented supply chain strategies, often described as “One Plus China” or “regional silos,” where China serves as a domestic production hub isolated from other markets. In this context, diversification through nearshoring, friendshoring, or reshoring becomes not just strategic, but essential.

Nearshoring to Mexico and Canada offers geographic proximity, trade alignment, and growing policy incentives. Mexico’s 2025 Nearshoring Decree and “Plan Mexico” offer tax deductions and infrastructure investments that are already drawing attention from major players. Foxconn, for instance, is building the world’s largest Nvidia chip facility in Mexico.<sup>124</sup>

Friendshoring to India, Vietnam, and other allies provides lower labor costs, more predictable geopolitical positioning compared to China, and access to critical inputs. India’s Mines and Minerals Amendment Act and Vietnam’s manufacturing ecosystem both support these trends.

Reshoring to the U.S. is gaining momentum as the government invests in domestic capacity for minerals like lithium, antimony, and tungsten, while leveraging protective tariffs to make U.S.-based production more competitive. Public-private partnerships are also supporting

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<sup>124</sup> Roberto Arena Reyes Retana, Fernando Camarena Cardona, and Erika Padilla, “Mexican Government Announces Incentives in Support of Nearshoring,” *The National Law Review*, February 5, 2025, <https://natlawreview.com/article/mexican-government-announces-incentives-support-nearshoring>.

rare-earth independence and bolstering domestic supply chains critical to national security and long-term resilience.

For Dell, diversification allows greater risk management, improved cost control amid tariffs, and enhanced resilience across legal environments. It also allows for more agile responses to region-specific enforcement volatility or political shifts—helping reduce reliance on single markets or compliance systems.

## **2. Build Dedicated Geopolitical Risk Intelligence Capabilities**

Our second recommendation is for Dell to formalize and scale its geopolitical risk monitoring capabilities. As the global regulatory and trade landscape grows more fragmented, a reactive approach to risk will no longer suffice. We recommend Dell consider building a dedicated Geopolitical Risk Intelligence Function that focuses on ongoing scenario planning, horizon scanning, and real-time policy tracking.

This function would monitor developments across critical areas such as trade policy shifts, sanctions, export controls, forced localization mandates, and all other regulations. Special emphasis should be placed on jurisdictions where enforcement volatility is high, such as China, where legal and regulatory environments are evolving rapidly.

To strengthen this capability, Dell could integrate AI-powered tools for real-time policy surveillance and early-warning detection, enabling the company to proactively flag and evaluate potential compliance threats before they escalate. Additionally, partnering with local legal experts or compliance consultants in high-risk markets will help the company interpret local nuances and avoid missteps.

These efforts could greatly enable Dell to move from reactive compliance management toward strategic, forward-looking geopolitical risk planning.

## **3. Strengthen Supplier Management Infrastructure in High-Risk Jurisdictions**

In tandem with geopolitical intelligence, we recommend Dell to strengthen its supplier risk management processes—particularly in regions with heightened regulatory uncertainty and geopolitical friction.

For suppliers operating in high-risk jurisdictions such as China, Dell should increase the frequency of audits, especially for vendors involved in export-sensitive technologies, ESG-sensitive operations, or sectors linked to forced labor or critical materials. These audits can serve as a frontline defense against reputational and legal risks.

Additionally, Dell should enhance its onboarding protocols to ensure suppliers are rigorously screened before integration. This includes requiring more robust compliance documentation, operational risk disclosures, and, where applicable, local counsel review of regulatory obligations.

Embedding regional knowledge into onboarding—whether through local teams or third-party experts—will be critical to navigating the growing divergence in regulatory regimes. These steps will not only reduce exposure to sudden enforcement actions but also improve Dell’s ability to assess supplier resilience and long-term alignment with strategic priorities.

## **4. Limitations**

First, we lacked access to Dell’s internal systems, compliance documentation, supplier databases, and operational workflows. Our analysis was entirely based on publicly available sources, secondary research, and case comparisons. As a result, we may not have visibility into initiatives already underway within Dell or operational constraints that limit certain strategic options. Some of our recommendations may reinforce Dell’s current direction, while others may not be practically applicable given internal priorities or capabilities.

Second, the pace of regulatory change remains a major constraint. Over the course of our research, we observed unprecedentedly rapid developments in tariffs and trade policies. Our findings reflect the status of these regulations as of early 2025. However, their ongoing evolution could affect the relevance and accuracy of our conclusions if not regularly updated through continued monitoring and policy tracking.

Third, our geographic scope included major regions such as the U.S., EU, China, Mexico, and Southeast Asia, but the level of depth and granularity varied by country. Due to time constraints, we were unable to capture all the regulatory nuances, enforcement cultures, or political dynamics that influence compliance risk at the local level. In particular, jurisdictions with less transparent or more volatile legal systems may require deeper legal review and on-the-ground validation.

Finally, while our report focused on traceability, due diligence, and regulatory compliance, we did not conduct a full evaluation of business factors such as cost efficiency, production timelines, supplier financial health, or technology readiness. These considerations, critical to decision-making, were outside our research mandate but are essential for Dell’s internal teams to weigh when assessing supply chain strategies.

## IX. Conclusion

In light of accelerating deglobalization and growing trade fragmentation, Dell must adapt to a global operating environment that no longer favors seamless integration. Instead, the company must embrace regionally differentiated strategies that balance compliance with resilience. The geopolitical rift, especially between the U.S. and China, has created an unpredictable landscape where reliance on any single region carries heightened risk. For Dell, this means decoupling certain operations, diversifying supply sources, and embracing production models such as nearshoring and friendshoring that align with emerging industrial policies and regulatory frameworks.

At the same time, Dell must recognize that regulatory divergence and legal uncertainty are becoming structural features of global markets. To stay competitive and compliant, the company must build agile, traceable, and regionally responsive supply chains. This involves not just tracking materials and emissions, but also forging closer ties with governments, strategic partners, and local suppliers. In doing so, Dell can better navigate the increasingly fragmented landscape, maintain operational continuity and sustain long-term growth in a world where geopolitical forces and regulatory regimes are rapidly reshaping the rules of global business.

Apple and IBM offer two distinct but complementary models of global supply chain transformation. Apple's approach centers on strategic diversification and operational excellence, evolving from a China-centric model to a regionally distributed network that includes India, Vietnam, Southeast Asia, and the U.S., while maintaining control over key technologies and prioritizing sustainability through aggressive carbon reduction and renewable energy goals. In contrast, IBM has reimagined its supply chain through a digital transformation driven by AI and data integration, using cognitive control towers to enable real-time visibility, predictive risk management, and resilient operations. Together, these cases illustrate how tech companies can achieve agility and resilience either by optimizing physical supply chain structures or by embedding intelligence and automation into supply chain decision-making.

Given geopolitical uncertainties, it is recommended that Dell prioritize regional supply chain diversification, institutionalize geopolitical risk intelligence, and enhance supplier oversight in high-risk jurisdictions. These actions are not intended to replace Dell's existing capabilities, but to reinforce long-term resilience and compliance in an increasingly volatile environment. To further strengthen its global supply chain operations, Dell should integrate AI-powered tools that enable real-time monitoring and early detection of potential compliance threats. By doing so, the company can shift from reactive responses to proactive geopolitical risk planning, positioning itself as a forward-looking leader in global supply chain strategy.



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## XI. Glossary of Key Terms and Acronyms

**3TG** – Tin, Tantalum, Tungsten, Gold (conflict minerals)  
**A-PACT** – Automotive Partnership for Carbon Transparency  
**ACRA** – Accounting and Corporate Regulatory Authority  
**ADEME** – French Agency for Environment and Energy Management  
**AF** – Accelerated Filer  
**AGEC** – Anti-Waste and Circular Economy Law  
**AML/CFT** – Anti-Money Laundering / Countering Terrorism Financing  
**BABA** – Build America, Buy America (U.S. sourcing rule)  
**BCSD** – Business Council for Sustainable Development  
**Blockchain Traceability** – Decentralized supply-chain verification  
**CAHRAs** – Conflict-Affected and High-Risk Areas  
**CARB** – California Air Resources Board  
**CBAM** – Carbon Border Adjustment Mechanism  
**CBP** – U.S. Customs and Border Protection  
**CCDAA** – California Climate Corporate Data Accountability Act  
**CDP** – Carbon Disclosure Project  
**CDSB** – Climate Disclosure Standards Board  
**CFP** – Carbon Footprint  
**CHIPS Act** – U.S. semiconductor manufacturing law  
**COP** – Conference of the Parties (UNFCCC)  
**CSDDD** – EU Corporate Sustainability Due Diligence Directive  
**CSRD** – EU Corporate Sustainability Reporting Directive  
**CX-PCF** – Catena-X Product Carbon Footprint  
**Digital Product Passport** – EU product sustainability data  
**DRC** – Democratic Republic of the Congo  
**EF** – Environmental Footprint  
**EFRAG** – European Financial Reporting Advisory Group  
**EGC** – Emerging Growth Company  
**EICC** – Electronic Industry Citizenship Coalition  
**EPEAT** – Electronic Product Environmental Assessment Tool  
**ESG** – Environmental, Social, Governance  
**ESRS** – European Sustainability Reporting Standards  
**ETS** – Emissions Trading System  
**EU** – European Union  
**FCRL** – French Climate and Resilience Law  
**FSA** – Japan’s Financial Services Agency  
**GBA** – Global Battery Alliance  
**GEC** – Global Electronics Council  
**GEM** – Growth Enterprise Market (Hong Kong)  
**GeSI** – Global e-Sustainability Initiative

**GFANZ** – Glasgow Financial Alliance for Net Zero  
**GHG** – Greenhouse Gas  
**GHG Protocol** – Corporate GHG accounting standard  
**GRI** – Global Reporting Initiative  
**ICT** – Information and Communication Technology  
**IFRS** – International Financial Reporting Standards  
**III** – Institute for Information Industry (Taiwan)  
**iNEMI** – International Electronics Manufacturing Initiative  
**IOSCO** – International Organization of Securities Commissions  
**ISO** – International Organization for Standardization  
**ISSB** – International Sustainability Standards Board  
**JRC** – EU Joint Research Centre  
**KCGS** – Korea ESG Standards Institute  
**LAF** – Large Accelerated Filer  
**LCA** – Life Cycle Assessment  
**LCI** – Life Cycle Inventory  
**LCIA** – Life Cycle Impact Assessment  
**Modern Slavery Act** – UK anti-slavery disclosure law  
**NAF** – Non-Accelerated Filer  
**NCA** – EU National Competent Authorities  
**NDC** – Nationally Determined Contribution (Paris Agreement)  
**NFRD** – EU Non-Financial Reporting Directive  
**NLCos** – Non-Listed Companies  
**OEFSR** – Organisational Environmental Footprint Sector Rules  
**OEM** – Original Equipment Manufacturer  
**PAIA** – Product Attribute to Impact Algorithm  
**PACT** – Partnership for Carbon Transparency  
**PCF** – Product Carbon Footprint  
**PEF** – Product Environmental Footprint  
**PEFCR** – Product Environmental Footprint Category Rules  
**Pre-Assembly** – Raw-material & component sourcing  
**Post-Assembly** – Testing, packaging, distribution  
**R2** – Responsible Recycling certification  
**RBA** – Responsible Business Alliance  
**RCOI** – Reasonable Country of Origin Inquiry  
**Red Flag Indicators** – Forced-labor risk criteria  
**Responsible Sourcing** – ESG-integrated procurement  
**RMI** – Rocky Mountain Institute  
**SASB** – Sustainability Accounting Standards Board  
**SCC** – Semiconductor Climate Consortium  
**SEC** – U.S. Securities and Exchange Commission  
**SER** – Social and Environmental Responsibility  
**SERI** – Sustainable Electronics Recycling International

**SGX RegCo** – Singapore Exchange Regulation  
**SME** – Small and Medium-Sized Enterprises  
**SRC** – Smaller Reporting Company  
**SSBJ** – Sustainability Standards Board of Japan  
**SSE** – UN Sustainable Stock Exchanges initiative  
**Stage Classification** – Pre- or Post-Final Assembly rules  
**TCFD** – Task Force on Climate-related Financial Disclosures  
**TfS** – Together for Sustainability  
**Traceability** – Supply-chain tracking  
**UNFCCC** – UN Framework Convention on Climate Change  
**UFLPA** – Uyghur Forced Labor Prevention Act (U.S.)  
**USGS Critical Minerals List** – U.S. 50 strategic minerals  
**Validated Smelter** – Responsibly sourced metal processor  
**Voluntary Frameworks** – OECD/RBA ESG standards  
**WBCSD** – World Business Council for Sustainable Development  
**WRI** – World Resources Institute  
**WRO** – Withhold Release Order (CBP enforcement)

## XII. Appendix

### Appendix A. Expert Interviews

#### 1. Columbia Business School Professor

**Date:** April 12, 2025

**Interviewee:** Anonymous Columbia Business School Professor

**Purpose:** To gain expert insights on U.S., China, and EU trade trends and implications for global supply chains, particularly in the context of Dell Technologies' operations.

**Biography:**

The interviewee is a Professor of Chinese Business and Economy and Professor of Finance and Economics at Columbia Business School. He is a leading scholar in international trade and finance and has been frequently cited in reputable global media outlets. Due to the professor's preference to remain anonymous in public-facing work, his/her name is not disclosed in this report.

**Summary of Interview:**

**Tariff Escalation and Global Supply Chain Costs**

The professor began the conversation by addressing the recent U.S.-China tariff escalation. He noted that these measures significantly increase the cost of doing business across borders. Unlike standard supply chains where only transportation costs are incurred, cross-border tariffs now add a substantial layer of expense with each country involved. This makes longer, multi-country supply chains considerably more costly and complex. While China has signaled a pause on further tariff hikes, it has hinted at non-tariff countermeasures. According to the professor, the U.S. is currently the only country actively increasing tariffs, and other countries may respond cautiously. Given this environment, the professor recommended that companies consider simplifying their supply chains by concentrating production and final assembly in fewer countries.

**Strategic Supply Chain Realignment**

In response to questions about how firms can adapt, the professor emphasized that multinational companies must factor in both cost and geopolitical risk. While China was once unmatched in low-cost manufacturing, rising wages have eroded its cost advantage, with wages now three times higher than those in India. Still, China's entrenched industrial infrastructure offers strategic value. Many firms have adopted the "China+1" strategy—maintaining a presence in China while expanding into countries like Vietnam or Indonesia. However, the professor noted a trend toward "1+China" models as well, where China serves as a secondary rather than

primary hub. Some firms, such as Apple, have established region-specific operations to manage geopolitical risks. Countries like Vietnam and Indonesia are leveraging FDI-friendly policies to attract relocation, and the professor recommended consulting the United Nations Conference on Trade and Development (UNCTAD) annual FDI reports for insights into investment trends.

### **Feasibility of Reducing Reliance on China**

When asked whether it is realistically possible for companies to significantly reduce dependence on Chinese suppliers in critical sectors, the professor responded with caution. While some diversification is feasible, China remains deeply embedded in global manufacturing networks. For many firms, fully exiting China is not only impractical but also economically inefficient. The professor advised that optimization—not complete decoupling—should be the goal. Partial diversification, supported by data-driven risk assessments, is more sustainable over the next decade than abrupt shifts.

### **Sectoral Challenges in Diversification**

The professor highlighted that certain industries will face greater difficulty in shifting supply chains. Sectors such as semiconductors and pharmaceuticals are highly specialized and subject to extensive regulatory scrutiny, making them slow and expensive to relocate. High capital investment requirements and long certification processes make these sectors less agile in the face of geopolitical shocks.

### **Macroeconomic Risks and Vulnerabilities**

Turning to broader economic impacts, the professor reflected on recent warnings from financial leaders such as BlackRock CEO Larry Fink, who suggested that widespread tariffs could push the U.S. toward a recession. The professor agreed that protracted trade tensions could trigger global economic slowdowns, particularly in export-driven sectors like manufacturing, consumer electronics, and advanced technology. Regions heavily integrated into U.S.-China trade—such as Southeast Asia—are especially susceptible to secondary effects.

### **Non-Tariff Measures and U.S.-China Cultural Tensions**

The professor also discussed China's increasing use of non-tariff measures as tools for economic retaliation. One notable example is the potential reduction in imports of U.S. cultural products such as Hollywood films. These measures, while not directly financial, could erode American soft power and indicate a deeper strategic pivot by China toward retaliatory policies that affect both economics and cultural exchange.

### **Technological Decoupling and Corporate Strategy**

On the topic of high-tech industries, the professor noted the growing concern over technological decoupling. The United States' imposition of a 25% tariff on semiconductors and pharmaceuticals reflects a shift toward protecting key innovation sectors. This has forced multinational companies to reconsider the structure of their global operations. The professor recommended that firms adopt a dual-track approach—maintaining operations in China while simultaneously investing in alternative supply chains in geopolitically stable regions. This

strategy allows companies to hedge against sudden shocks without sacrificing market competitiveness.

### **Outlook on De-escalation**

Finally, when asked whether there is a viable path toward easing tensions, the professor expressed skepticism about short-term resolutions under the current administration. However, he/she acknowledged that longer-term de-escalation may be possible through shifts in domestic political will or renewed engagement in multilateral negotiations. Until then, companies must remain proactive and adaptable in managing supply chain risks.

## **2. Columbia Law School Professor**

**Date:** April 15, 2025

**Interviewee:** Anonymous Columbia Law School Professor

**Purpose:** To understand how recent and emerging Chinese regulations affect multinational companies operating in China, particularly in high-tech and supply chain-sensitive sectors relevant to Dell Technologies.

### **Biography:**

The interviewee leads a center at Columbia Law School dedicated to the study of Chinese legal developments, which is the first of its kind in the U.S.. The center focuses on preparing future leaders with the expertise necessary to navigate China's rapidly evolving legal environment. Due to the professor's preference for anonymity in external publications, his name is withheld in this report.

### **Summary of Interview:**

#### **Tightening Controls on Foreign Technology Inputs**

The professor began by discussing recent restrictions imposed on major foreign chipmakers like Intel and AMD, which are now prohibited from supplying components for use in Chinese government systems. In parallel, companies such as Nvidia are facing antitrust scrutiny. According to the professor, these trends indicate a growing move toward regulatory reciprocity, mirroring the legal and policy pressures imposed by the U.S. on Chinese firms. While full decoupling is difficult to envision in the near term, the trajectory is toward increased self-reliance. The professor noted that multinationals may eventually be compelled to localize not only manufacturing but also design and R&D functions within China. Strategic planning is essential, given the current legal and political climate that makes long-term cooperation more uncertain.

#### **Legal Codification of Resource Sovereignty**

When asked about China's export control measures—particularly those involving critical minerals and rare earth elements—the professor highlighted the growing influence of national security considerations in shaping legal doctrine. While many of these measures currently

emerge from policy decisions, there is a clear pattern of law catching up to political intent. The codification of “resource sovereignty” appears increasingly likely, with the legal infrastructure (laws, administrative measures, and regulatory guidelines) progressively reinforcing state control over critical resource flows. The recent inclusion of materials such as gallium, graphite, and tellurium in export control regimes reflects this trend.

### **Data Localization vs. Foreign Disclosure Requirements**

Turning to data security, the professor addressed the challenges posed by the Network Data Security Management Regulation, which builds on previous frameworks like the Personal Information Protection Law (PIPL) and the Cybersecurity Law. For multinational firms, reconciling China’s stringent data localization requirements with international transparency and disclosure rules presents a fundamental conflict. The professor stated bluntly that in many cases, compliance with both sets of obligations may be legally impossible. Firms must therefore make difficult strategic decisions, weighing regulatory risks in both jurisdictions and preparing for a scenario in which partial non-compliance is unavoidable.

### **Sustainability of Tariff Retaliation Mechanisms**

Lastly, the professor was asked about the legal sustainability of China’s rapid tariff adjustment practices. In 2025 alone, five rounds of tariff changes have been announced. While these moves serve short-term geopolitical objectives, the professor questioned their long-term viability from a rule-of-law perspective. Constant regulatory shifts risk undermining predictability, weakening foreign investor confidence, and stretching China’s own legal infrastructure. Yet, as long as trade relations remain volatile, tit-for-tat mechanisms may continue to dominate, justified more by politics than legal or economic stability.

## **3. Dell Internal Assessment - Critical Raw Materials**

Compiled internally by Dell’s team

Antimony, Arsenic, Barite, Bismuth, Cobalt, Fluorite/Fluorine/Fluorspar, Gallium, Germanium, Gold, Graphite, Indium, Lithium, Magnesium, Mica, Platinum, Steel, Tellurium, Tin, Titanium, Tungsten, Zinc, Silicon\*, Aluminum, Vanadium, Cadmium, Boron\*, Lead, Mercury, Molybdenum, Phosphate Rock, Palladium\*, Tantalum\*, Argon, Copper, HREE, LREE, Neon, Nickel, Silver, Hafnium, Iridium, Zirconium

\*Note: \* indicates internal tracking priority.



## Appendix B. EU

### *i) Current Regulations*

#### **Batteries Regulation**<sup>125</sup>

Batteries are an indispensable energy source and a key technology in the transition to climate neutrality, and to a more circular economy. Global demand for batteries is increasing rapidly and is set to increase 14 times by 2030. The EU could account for 17% of that demand.

The Batteries Regulation aims to minimise the environmental impact of this exponential growth in light of new socioeconomic conditions, technological developments, markets, and battery usages. Under the new law, the European Green Deal, the circular economy and zero pollution ambitions of the EU are brought forward.

#### **Scope**<sup>126</sup>:

- All types of batteries placed on the market and/or put into service in the EU or European Economic Area (EEA). This includes batteries which are sold or supplied independently, and are contained within products.
- Batteries forming part of, for example: medical devices, in vitro diagnostic medical devices, electric vehicles, etc – are therefore generally in scope of the EU Batteries Regulation.
- The EU Batteries Regulation essentially divides batteries into 5 separate categories and other subcategories including:
  - portable batteries (including general / specific use)
  - starting, lighting and ignition batteries (SLI batteries)
  - light means of transport batteries (LMT batteries – e.g. those used in e-bikes and scooters)
  - electric vehicle batteries
  - industrial batteries, including stationary battery energy storage systems

#### **Timeline**<sup>127</sup>:

- August 17, 2023: The Batteries Regulation entered into force.
- August 18, 2026: Rechargeable portable batteries, LMT batteries, and SLI batteries must bear a label with information on their capacity. Non-rechargeable portable batteries must bear labels indicating capacity and “non-rechargeable.”

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<sup>125</sup> European Commission, *Batteries*,  
[https://environment.ec.europa.eu/topics/waste-and-recycling/batteries\\_en](https://environment.ec.europa.eu/topics/waste-and-recycling/batteries_en).

<sup>126</sup> Navin-Jones, M and Yuzko, O, *The EU Batteries Regulation: Taking Stock of the New EU Battery Requirements*. Crowell, 2024.

<https://www.crowell.com/en/insights/client-alerts/the-eu-batteries-regulation-taking-stock-of-the-new-eu-battery-requirements>

<sup>127</sup> PicoNext, *Battery Passport Timeline*, Medium, 2024,  
<https://medium.com/@piconext/battery-passport-timeline-95dd70a61194>.

- August 18, 2027: Producers of portable batteries must achieve a 63% collection target for waste portable batteries.
- February 18, 2027: LMT batteries, industrial batteries over 2kWh, and EV batteries must have a Battery Passport.
- August 18, 2028: Industrial batteries over 2kWh (except those with exclusively external storage), EV batteries, and SLI batteries containing cobalt, lead, lithium, or nickel must include documentation detailing the percentage of recycled content.
- June 30, 2031: The Commission will review the application of the Battery Regulation and submit a report, including an evaluation of various aspects, to the European Parliament and Council.

### **Implications<sup>128</sup>:**

- Portable batteries, whether or not incorporated into appliances, must not contain more than 0,01 % of lead by weight. (This does not apply to portable zinc-air button cells until 18 August 2028.)
- Rechargeable industrial batteries with a capacity greater than 2 kWh, LMT batteries and EV batteries shall be accompanied by a document containing the values of the electrochemical performance and durability parameters, as well as technical documentation on how the values were determined.
- Stationary battery energy storage systems, LMT batteries and EV batteries should include information in their battery management systems on parameters for determining the state of health and expected lifetime.
- Stationary battery energy storage systems should have technical documentation confirming that these systems are safe during their operation and use.
- Certain conformity procedures come into effect in relation to most requirements, other than carbon footprint and recycled content.
- Draw up the EU declaration of conformity and affix the CE marking confirming that the battery meets these applicable requirements.

### **Penalties<sup>129</sup>:**

- By August 18, 2025, Member States must establish penalties applicable to infringements of the Batteries Regulation and must ensure that those penalties are effectively implemented.
- The penalties must be effective, proportionate and dissuasive, which means that when imposing penalties, “due regard” must be given to the nature, gravity, scope, intentional nature and repetition of the infringement.

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<sup>128</sup> Navin-Jones, M and Yuzko, O, *The EU Batteries Regulation: Taking Stock of the New EU Battery Requirements*, Crowell, 2024, <https://www.crowell.com/en/insights/client-alerts/the-eu-batteries-regulation-taking-stock-of-the-new-eu-battery-requirements>

<sup>129</sup> Vanherck, D and D’Haene, C, *Powering change: Navigating the EU Batteries Regulation*, Deloitte, 2024, <https://www.deloittelegal.be/lg/en/blog/Deloitte-Legal-Newsflashes/2024/2024-01-17-newflash-batteries-regulation.html>

- The level of cooperation with the competent authority will also be taken into account.

#### **Evaluation:**

- **Status:** *Partially Effective*
- **Severity:** *High*
  - The regulation imposes extensive requirements across the battery lifecycle, from material composition and labeling to documentation and recycling targets. While the specific level of penalties is left to Member States, the EU's strong emphasis on environmental protection and circular economy goals suggests that enforcement will be strict.
- **Enforcement Volatility:** *Low*
  - The scope, implementation timeline, and regulatory expectations are clearly defined.
- **Stage Classification:** *Pre-Final Assembly*
  - The requirements affect the design, sourcing, documentation, and labeling of batteries and battery components, which must be addressed before final product assembly.

#### **The anti-coercion instrument (ACI)**<sup>130</sup>

The ACI is first and foremost designed to act as a deterrent against economic coercion. Where coercion still happens, the tool provides a structure to respond in a calibrated way to stop the coercion. It gives the EU a wide range of possible countermeasures when a country refuses to remove the coercion.

These include the imposition of tariffs, restrictions on trade in services and trade-related aspects of intellectual property rights, and restrictions on access to foreign direct investment and public procurement.

#### **Scope:**

- Goods entering the EU from a country which refuses to remove what the EU decides is coercive.

#### **Timeline:**

- December 27, 2023: The ACI entered into force<sup>131</sup>.
- Mar 28, 2023: The EU has agreed to the ACI to retaliate against countries such as China's block on Lithuanian imports over the Baltic state's relationship with Taiwan<sup>132</sup>.

#### **Implications:**

<sup>130</sup> European Commission, *New tool to enable EU to withstand economic coercion enters into force*, [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_6804](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_6804).

<sup>131</sup> European Commission, *Protecting against coercion*, [https://policy.trade.ec.europa.eu/enforcement-and-protection/protecting-against-coercion\\_en](https://policy.trade.ec.europa.eu/enforcement-and-protection/protecting-against-coercion_en)

<sup>132</sup> Bounds, A, *EU agrees trade defence tool against China*, *Financial Times*, 2023, <https://www.ft.com/content/6f77236e-3cd7-4d95-a5fd-f86b7769ae6e>.

- Coercive actions by a third country that harm economic activity in the EU fall within the scope of the ACI. This includes trade or investment activities carried out by entities operating in the EU that are controlled or directed by that third country. As a result, such entities should be aware that their actions could be considered part of a coercive strategy and may trigger retaliatory measures under the ACI.<sup>133</sup>
- In fact, the EU is reportedly preparing to apply the ACI to Silicon Valley if President Donald Trump follows through on his threats to impose tariffs on the EU. This could result in countermeasures targeting U.S. service sectors, particularly Big Tech. According to EU officials, Trump's past threats—such as using tariffs to pressure Denmark into handing over Greenland or to force the EU to drop enforcement actions against U.S. tech companies—would qualify as economic coercion under the ACI framework.<sup>134</sup>

### Penalties<sup>135</sup>:

- The ACI offers the Commission a wide choice of response measures. It provides for the possibility of increasing customs duties, restricting importations or exportations, excluding participation in public tenders, and also allows for the non-performance of applicable international obligations in numerous fields (international property rights, insurance, banking, chemicals, and so on).
- Such response measures can also target specific individuals and companies which engage or might engage in activities falling under the EU's common commercial policy and are connected or linked to the government of the third country. The latter criterion is met when:
  - The government of the third country concerned controls the legal person.
  - It owns more than 50 % of the equity interest, exercises directly or indirectly more than 50% of the voting rights in it, or has the power to legally direct its actions;
  - The person benefits from exclusive or special rights or privileges granted in law or in fact by the government of the third country concerned.
  - The person effectively acts on behalf of, or under the direction or instigation of, the government of the third country concerned.

### Evaluation:

- **Status:** *Effective*
- **Severity:** *High*

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<sup>133</sup> Norton Rose Fulbright, *EU Anti-Coercion Instrument: Key takeaways for businesses, 2024*, <https://www.nortonrosefulbright.com/en-de/knowledge/publications/oc873dd6/eu-anti-coercion-instrument-key-takeaways-for-businesses>.

<sup>134</sup> Bounds, A, *EU prepares to hit Big Tech in retaliation for Donald Trump's tariffs*. *Financial Times*, 2025, <https://www.ft.com/content/7303e57e-67ca-477a-8d00-8d5213f7120c>.

<sup>135</sup> Akritidis, V and Blancardi, J, *The Anti-Coercion Instrument: What Is It and How Europe Might Use It Over the Next Four Years*, Crowell, 2025, <https://www.crowell.com/en/insights/client-alerts/the-anti-coercion-instrument-what-is-it-and-how-europe-might-use-it-over-the-next-four-years>.

- While the regulation does not impose automatic penalties, it grants the European Commission significant discretion to adopt retaliatory measures, including tariffs, investment restrictions, and public procurement bans, which are expected to be very strict.
- **Enforcement Volatility:** *High*
  - Due to the broad discretionary power vested in the Commission and the absence of predefined criteria for when or how specific countermeasures will be triggered, the level and type of enforcement may vary significantly across cases.
- **Stage Classification:** *Post-Final Assembly*
  - The regulation primarily affects market access, trade, and investment conditions once a product or service has been completed.

### **Digital Markets Act**<sup>136</sup>

The DMA establishes a set of clearly defined objective criteria to qualify a large online platform as a “gatekeeper” and ensures that they behave in a fair way online and leave room for contestability. The Digital Markets Act is one of the centrepieces of the European digital strategy.

The DMA aims that business users who depend on gatekeepers to offer their services in the single market will have a fairer business environment and that consumers will have more and better services to choose from, more opportunities to switch their provider if they wish so, direct access to services, and fairer prices.

### **Scope**<sup>137</sup>:

- Six gatekeepers were announced in September 2023:
  - Alphabet (owner of Google and YouTube)
  - Amazon
  - Apple
  - ByteDance (owner of TikTok)
  - Meta (owner of Facebook, Instagram and WhatsApp)
  - Microsoft
- The legislation leaves room for future gatekeepers to emerge if they meet the criteria.

### **Timeline**<sup>138</sup>:

- November 1, 2022: The DMA entered into force.
- May 2023: Most of the DMA rules became applicable.

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<sup>136</sup> European Commission, *Cyber Resilience Act*, <https://digital-strategy.ec.europa.eu/en/policies/cyber-resilience-act>.

<sup>137</sup> Dougal, S. *EU Digital Markets Act explained*, *Checkout.com*, 2024, <https://www.checkout.com/blog/checkout-com-explains-the-eu-digital-markets-act>.

<sup>138</sup> Unsercentrics. *Digital Markets Act timeline: a roadmap to regulation*, 2023, <https://usercentrics.com/knowledge-hub/digital-markets-act-timeline/>.

- September 6, 2023: The European Commission designated the first six gatekeeper companies that need to comply with the DMA.
- May 2024: A seventh gatekeeper (Booking.com) was designated.

### **Implications<sup>139</sup>:**

- The DMA requires gatekeepers to:
  - Allow communication between businesses and consumers
  - Ensure price and fee transparency in ad intermediation services
  - Allow consumers to easily change default settings and/or uninstall any software apps on an operating system (OS), unless it would compromise the OS
  - Allow the installation and use of third-party apps or app stores, unless it would compromise the OS
  - Provide businesses with real-time access to their data generated on the platform
  - Provide other online search engines with fair, reasonable and non-discriminatory access to ranking, query, click and view data generated by consumers on their online search engines.

### **Penalties<sup>140</sup>:**

- Fines will be up to 10% of gatekeepers' global turnover.

### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *Low*
  - Although this regulation is severe for gatekeepers or potential gatekeepers, given Dell's business model, it is not plausible that Dell will be punished by this regulation.
- **Enforcement Volatility:** *Low*
  - The scope and timeline of this regulation is clear.
- **Stage Classification:** *Post-Final Assembly*
  - The requirements of the DMA relate to the operation and use of the OS or platform on the finished product, and do not directly impact the procurement of components or the manufacturing stage.

## **ii) Emerging Regulations**

### **Cyber Resilience Act (CRA)<sup>141</sup>**

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<sup>139</sup> TrustArc, *Explained: What is the EU Digital Markets Act (DMA)?*, <https://trustarc.com/resource/what-is-the-eu-digital-markets-act-dma/>.

<sup>140</sup> Mariniello, M, *Geopolitics and fines for breaches of the EU's Digital Markets Act*, Bruegel, 2025, <https://www.bruegel.org/first-glance/geopolitics-and-fines-breaches-eus-digital-markets-act-0#:~:text=If%20found%20noncompliant%2C%20the%20digital,in%20a%20politically%20charged%20context.>

<sup>141</sup> European Commission, *Cyber Resilience Act*, <https://digital-strategy.ec.europa.eu/en/policies/cyber-resilience-act>.

The CRA aims to safeguard consumers and businesses buying software or hardware products with a digital component. It addresses the inadequate level of cybersecurity in many products, and the lack of timely security updates for products and software.

The new requirements will make it easier to take cybersecurity into account when selecting and using products that contain digital elements. It will be more straightforward to identify hardware and software products with the proper cybersecurity features.

**Scope<sup>142</sup>:**

- This regulation applies to those manufacturers, importers and distributors of products and services who are located in the EU.
- All manufacturers, whether based in the EU or not, will have to comply with the CRA requirements in order to place their products or services on the EU market.
- The CRA defines a “product with digital element” as either software or hardware (or a product combining both), which means numerous goods we all use in our daily life and therefore many everyday products (from smart watches to digital assistants to baby monitors) within the CRA’s scope.

**Timeline<sup>143</sup>:**

- December 10, 2024: The CRA entered into force.
- June 11, 2026: Certain provisions on the notification of conformity assessment bodies will be applied.
- September 11, 2026: Manufacturers must comply with reporting obligations with regard to actively exploited vulnerabilities and severe incidents concerning their digital products.
- December 11, 2027: Its overall applicability commenced.

**Implications<sup>144</sup>:**

- The products with digital elements (PDEs) shall be designed, developed, and produced to ensure an appropriate level of cybersecurity based on the risks they face.
- Where applicable, products with digital elements shall:
  - Be sold with the secure default configuration
  - Be protected from unauthorized access
  - Protect the confidentiality and integrity of the data they handle, limiting that data to the minimum necessary
- Identify and document the PDE components and their vulnerabilities.
- Address the vulnerabilities without delay.

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<sup>142</sup> BCLP, *Key insights on the EU Cyber Resilience Act – what businesses need to know*, 2024, <https://www.bclplaw.com/en-US/events-insights-news/key-insights-on-the-eu-cyber-resilience-act-what-businesses-need-to-know.html>.

<sup>143</sup> Medium, *Battery Passport Timeline*, 2024, <https://medium.com/@piconext/battery-passport-timeline-95dd70a61194>.

<sup>144</sup> Spektor, N, *What is the European Union Cyber Resilience Act (CRA)?*, Legit, 2024, <https://www.legitsecurity.com/blog/what-you-need-to-know-about-the-eu-cyber-resilience-act>.

- Regularly test and review the security of the PDE.
- Create an extensive vulnerability-handling plan containing:
  - Automatic security updates for fixing the vulnerabilities promptly
  - Advisory messages providing relevant information
  - A vulnerability report platform
  - Vulnerability disclosure policies
- Craft a risk assessment for the PDE, which will be documented and updated regularly.
- The assessment needs to include the following:
  - An analysis of cyber risks based on the purpose, use, and environment of the PDE.
  - The requirements from part 1, point 3, which are applicable to the PDE.
- Verify the integrity of third-party components so they don't compromise the security of the PDE, including open-source components.

#### **Penalties<sup>145</sup>:**

- Fines will be up to 2.5% of a company's global annual turnover or 15 million EUR (\$17,058,675<sup>146</sup>) for failing to meet cybersecurity requirements in Annex I.
- Fines will be up to 2% of global annual turnover or 10 million EUR for other obligations or requirements breaches.
- Fines will be up to 1% of global annual turnover or 5 million EUR (\$5,686,225) for providing incorrect, incomplete, or misleading information to EU and national authorities upon.

#### **Evaluation:**

- **Status:** *Enforced*
- **Severity:** *High*
  - The CRA imposes strict cybersecurity requirements on manufacturers of products with digital elements (PDEs), including hardware, software, and hybrid devices. Failure to comply may result in substantial financial penalties of up to 2.5% of global annual turnover or €15 million (\$17,058,675), highlighting the regulation's significant business impact.
- **Enforcement Volatility:** *Low*
  - The CRA provides a clear structure with defined obligations, timelines, and penalty thresholds.
- **Stage Classification:** *Post-Final Assembly*
  - Cybersecurity requirements must be addressed during the design and development phases of products with digital elements, well before they are assembled, shipped, or placed on the EU market.

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<sup>145</sup> Taelman, E and Focquet, A, *EU Cyber Resilience Act*, Crowell, 2025, <https://www.crowell.com/en/insights/publications/eu-cyber-resilience-act>.

<sup>146</sup> The conversion rate \$1 = €0.88 on April 19, 2025, at 11:54 PM UTC. The same shall apply hereunder.



### **Corporate Sustainability Due Diligence Directive (CSDDD)**<sup>147</sup>

The aim of CSDDD is to foster sustainable and responsible corporate behaviour in companies' operations and across their global value chains. The new rules will ensure that companies in scope identify and address adverse human rights and environmental impacts of their actions inside and outside Europe.

#### **Scope**<sup>148</sup>:

- Large EU limited liability companies & partnerships. 1,000 employees. EUR 450 million turnover (net) worldwide. The estimate is +/- 6,000 companies.
- Large non-EU companies. EUR 450 million turnover (net) in the EU. The estimate is +/- 900 companies.
- SMEs. Micro companies and SMEs are not covered by the proposed rules. However, the Directive provides supporting and protective measures for SMEs and SMCs (Small Midcaps Companies) with no more than 500 companies which could be indirectly affected as business partners in value chains.

#### **Timeline**<sup>149</sup>:

- July 25, 2024: The CSDDD entered into force.
- July 26, 2025: The process of being transposed into national laws by the Member States must be completed by July 26, 2026.
- From July 26, 2027: The largest companies with over 5,000 employees and a turnover of €1.5 billion must comply. Application starts for financial years beginning on or after 1 January 2028.
- From July 26, 2027: Non-EU companies with an EU net turnover of over €1.5 billion need to comply, starting for financial years beginning on or after 1 January 2028.
- From July 26, 2028: Companies with over 3,000 employees and €900 million turnover must comply. Application starts for financial years beginning on or after 1 January 2029.
- From July 26, 2028: Non-EU companies with an EU net turnover of more than €900 million must comply. The application starts for financial years beginning on or after January 1, 2029.
- From July 26, 2029: Other covered companies (more than 1,000 employees and a global net turnover at or above EUR 450 million), both EU-based and non-EU companies will need to comply. The application for these companies will begin for accounting years starting on or after January 1, 2029.

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<sup>147</sup> European Commission, *Corporate sustainability due diligence*, [https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence\\_en](https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en)

<sup>148</sup> European Commission, *Corporate sustainability due diligence*, [https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence\\_en](https://commission.europa.eu/business-economy-euro/doing-business-eu/sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en)

<sup>149</sup> Ecobio Manager, *CSDDD Timeline Explained*, <https://ecobiomanager.com/csddd-timeline-explained/>.

### **Implications<sup>150</sup>:**

- Integrate due diligence into policies and risk management systems.
- Identify and assess actual or potential adverse impacts, and, where necessary, prioritize potential and actual adverse impacts.
- Prevent and mitigate potential adverse impacts, and bring actual adverse impacts to an end and minimize their extent.
- Establish and maintain a notification mechanism and complaints procedure.
- Monitor the effectiveness of due diligence policy and measures.
- Publicly communicate on due diligence.

### **Penalties<sup>151</sup>:**

- Supervisory authorities must at least be able to impose financial penalties and "naming and shaming" measures.
- Member states are allowed to set the maximum fines, potentially over 5% of the net worldwide turnover for the fiscal year preceding the decision to issue the fine, in their national law.
- The decisions of the national supervisory authorities containing sanctions in connection with infringements of the national regulations adopted to implement the CSDDD must be made publicly available for at least five years, leading to reputation damage of the companies.

### **Evaluation:**

- **Status:** *Enforced*
- **Severity:** *High*
  - Companies face substantial compliance obligations across their entire global value chains. Non-compliance may result in fines potentially exceeding 5% of global net turnover, as well as reputational risks due to public disclosure of violations.
- **Enforcement Volatility:** *Low*
  - The directive sets a clear framework and timeline while enforcement mechanisms and penalty levels will vary by Member State.
- **Stage Classification:** *Pre-assembly*
  - The directive requires companies to conduct due diligence and implement risk mitigation measures throughout their upstream supply chains, making early-stage sourcing and supplier management critical.

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<sup>150</sup> ERM, *Corporate Sustainability Due Diligence Directive (CSDDD)*, 2024, <https://www.erm.com/insights/corporate-sustainability-due-diligence-directive-csddd/#requirements>.

<sup>151</sup> Baker McKenzie, *European Union: Penalties and civil liability under the CSDDD*, 2024, [https://insightplus.bakermckenzie.com/bm/environment-climate-change\\_1/european-union-penalties-and-civil-liability-under-the-cs3d](https://insightplus.bakermckenzie.com/bm/environment-climate-change_1/european-union-penalties-and-civil-liability-under-the-cs3d).

### **Ecodesign for Sustainable Products Regulation (ESPR)**<sup>152</sup>

The ESPR aims to significantly improve the sustainability of products placed on the EU market by improving their circularity, energy performance, recyclability and durability. It will also play a central role in developing a strong, well-functioning single market for sustainable products in the EU.

By doing so, a significant step will be taken towards better protecting our planet, fostering more sustainable business models and strengthening the overall competitiveness and resilience of the EU economy.

#### **Scope**<sup>153</sup>:

- Actors affected
  - Economic operators along the value chain, i.e. product manufacturers (both EU and non-EU)
  - EU importers, distributors, dealers (retailers, sellers) and fulfillment service providers
- Products affected
  - Virtually all products placed on the market or put into service in the EU, not limited to consumer products (only very limited exclusions (e.g. food, feed, medicinal products, certain vehicles subject to harmonised type-approval systems)).
  - Priority product groups for 1st ESPR working plan:
    - Iron and steel
    - Aluminium
    - Textiles, in particular garments and footwear
    - Furniture, including mattresses
    - Tyres
    - Detergents
    - Paints
    - Lubricants
    - Chemicals
    - Energy related products for which ecodesign requirements are to be set for the first time
    - Information and communication technology (ICT) products and other electronics

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<sup>152</sup> European Commission, *Ecodesign for Sustainable Products Regulation*, [https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/product-s-labelling-rules-and-requirements/ecodesign-sustainable-products-regulation\\_en#timeline](https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/product-s-labelling-rules-and-requirements/ecodesign-sustainable-products-regulation_en#timeline).

<sup>153</sup> REACHLAW, *The Ecodesign for Sustainable Products Regulation (ESPR)*, <https://www.reachlaw.fi/the-ecodesign-for-sustainable-products-regulation-espr/>.

**Timeline<sup>154</sup>:**

- July 18, 2024: The ESPR entered into force.
- July 19, 2025: Disclosure requirements for major enterprises will enter into force.
- July 19, 2026: The prohibition of the destruction of unsold consumer products for major enterprises will enter into force.
- July 19, 2026: The Digital Product Passport (DPP) registry will be operational.
- By 2028: The Commission will assess the potential benefits of setting requirements in relation to social aspects and propose future amendments.
- July 19, 2030: Disclosure requirements for major enterprises will enter into force.
- July 19, 2030: The prohibition of the destruction of unsold consumer products for medium-sized enterprises will enter into force.
- By 2030: The ESPR first evaluation will be issued with a further review every six years.

**Implications:**

- The ESPR will set ecodesign requirements to make products (e.g., electronic appliances) more environmentally sustainable in line with the EU's Green Deal and circular economy objectives. The ecodesign requirements will take the form of:<sup>155</sup>
  - Performance requirements: quantitative or qualitative requirements on a product to achieve a certain performance level, in light of a list of 20 potential parameters (relating, e.g., to durability, reusability, repairability, energy efficiency, recyclability, and carbon and environmental footprints)
  - Information requirements: information must be made available, as specified for a product category, (i) on product performance; (ii) for customers and other actors on how to use, maintain, and repair products; (iii) for treatment facilities on disassembly, reuse, refurbishment, recycling, or disposal; and (iv) other information that could influence sustainable product choices by customers
- Products entering the EU market, regardless of their origin, must have a DPP, which must be kept up to date, complete and accurate, containing information on the product's model, batch or level of the product, in addition to transparency of where more information on the product can be found.<sup>156</sup>

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<sup>154</sup> Hoffmann, S, Connellan, C, Forwood, G, Sitter, J, De Catelle, W, Kremer, P and Dhoore, C, *Eight key aspects to know about the EU Ecodesign for Sustainable Products Regulation*, White & Case, 2025, <https://www.whitecase.com/insight-alert/eight-key-aspects-know-about-eu-ecodesign-sustainable-products-regulation>.

<sup>155</sup> Sidley, *With Ecodesign for Sustainable Products Regulation, EU Will Impose Ecodesign Requirements on Virtually All Products Sold in EU*, 2024, <https://www.sidley.com/en/insights/newsupdates/2024/07/with-ecodesign-for-sustainable-products-regulation>.

<sup>156</sup> Buzeti, Z and Daphne, T, *A guide to the Ecodesign for Sustainable Products Regulation (ESPR)*, Circularise, 2024, <https://www.circularise.com/blogs/a-guide-to-the-ecodesign-for-sustainable-products-regulation-espr>.

**Penalties<sup>157</sup>:**

- Member States will enforce the ESPR and determine penalties for non-compliance, including heavy fines and exclusion from public contracts.

**Evaluation:**

- **Status:** *Enforced*
- **Severity:** *High*
  - Although the specific level of penalties is left to Member States, the EU's strong emphasis on environmental protection and circular economy goals suggests that enforcement will be strict.
- **Enforcement Volatility:** *Medium*
  - While the general framework and timeline are clearly defined, specific ecodesign requirements will vary by product category and be introduced progressively via delegated acts. This creates some uncertainty for affected industries regarding the scope and timing of obligations.
- **Stage Classification:** *Pre-Final Assembly*
  - The ecodesign and product information requirements must be addressed during the design and production stages—before the products are placed on the market or assembled for final use.

**“Buy European” procurement plan<sup>158</sup>**

According to a draft plan obtained by the Financial Times, the European Commission “will propose the introduction of a European preference in public procurement for critical sectors and technologies.” This move would echo President Trump’s “America First” policies, as the EU may introduce regulations that exclude foreign companies to encourage Europeans to purchase European-made products.

The plan aims to provide governments with tools to protect key EU industries from lower-cost competitors from China and other countries. In fact, the Commission intends to revise the public procurement directive next year, which currently mandates that all applicants must be treated equally and without discrimination.

**Scope:**

- If the law does resemble the policies it is modeled on, then the scope would likely be public procurement for critical sectors and technologies.

**Timeline:**

- Still unclear.

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<sup>157</sup> TÜV SÜD, *Understanding the Ecodesign for Sustainable Products Regulation (ESPR)*, <https://www.tuvsud.com/en-us/resource-centre/stories/understanding-ecodesign-sustainable-products-regulation#:~:text=4.-,Penalties%20for%20non%2Dcompliance,risks%20as%20early%20as%20possible>.

<sup>158</sup> Bounds, A and Hancock, A, *Brussels pushes 'buy European' procurement plan*, *Financial Times*, 2025. <https://www.ft.com/content/68070835-6519-4040-a48e-e320b53cdffe>.

**Implications:**

- Dell might have to assemble some components within the EU to sell their products in the EU market.

**Penalties:**

- Still unclear.

**Evaluation:**

- **Status:** Draft
- **Severity:** Unclear
- **Enforcement Volatility:** Unclear
- **Stage Classification:** Unclear

## Appendix C. US

### i) Current Regulations

#### 1. Critical Minerals & Supply Chain Security

##### **Executive Order 14257: “Liberation Day” Tariffs<sup>159</sup> (Updated as of April 19, 2025)**

On April 2, 2025, President Donald Trump declared a national emergency to address the U.S. trade deficit, issuing Executive Order 14257. This order imposed a universal 10% tariff on all imports to the United States, effective April 5, 2025. Additionally, it introduced higher “reciprocal” tariffs on countries with significant trade surpluses with the U.S., with rates varying by country. Notably, China faced a combined tariff rate of 145% due to existing and new levies. Following the announcement, China retaliated by increasing tariffs on U.S. goods from 84% to 125%, effective April 12, 2025. China also imposed export restrictions on critical rare earth elements, essential for various technologies, including semiconductors and electric vehicle batteries<sup>160</sup>. These actions have significant implications for companies like Dell, which rely on Chinese manufacturing and materials.

##### **Scope:**

The tariffs affect all U.S. imports, with elevated rates for approximately 90 countries. Specific increases include:

- China: 145%
- Vietnam: 46%
- Cambodia: 49%
- Thailand: 36%
- India: 26%
- European Union: 20%
- United Kingdom: 10%

##### **Timeline:**

- April 2, 2025: Announcement of tariffs
- April 5, 2025: Universal 10% tariff effective
- April 9, 2025: Higher country-specific tariffs effective
- April 9, 2025: 90-day pause announced for reciprocal tariffs, excluding China
- April 12, 2025: China’s 125% tariffs on U.S. goods effective

##### **Implications:**

- Supply Chain Disruption: Dell’s reliance on Chinese manufacturing for components and assembly faces significant challenges due to increased tariffs and export restrictions.

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<sup>159</sup> Barath Harithas, “*Liberation Day*” Tariffs Explained, Center for Strategic and International Studies, last modified April 3, 2025, <https://www.csis.org/analysis/liberation-day-tariffs-explained>.

<sup>160</sup> <https://www.cbsnews.com/news/trump-reciprocal-tariffs-liberation-day-list/>

- **Cost Increases:** The tariffs may lead to higher production costs, potentially resulting in increased prices for consumers.
- **Rare Earth Element Shortages:** China's export restrictions on rare earth elements could impact Dell's ability to source essential materials for its products.
- **Strategic Reassessment:** Dell may need to explore alternative supply chain strategies, including diversifying manufacturing locations and sourcing materials from other countries.

#### **Penalties:**

- **Increased Import Costs:** Higher tariffs directly raise the cost of imported goods.
- **Supply Chain Disruptions:** Export restrictions and retaliatory measures can lead to delays and shortages.
- **Competitive Disadvantage:** Increased costs may affect Dell's pricing competitiveness in the market.

#### **Evaluation:**

- **Status:** *Effective*
  - The tariffs are currently in effect, with the universal 10% tariff implemented on April 5, 2025, and higher country-specific tariffs on April 9, 2025.
- **Severity:** *High*
  - The combined effect of tariffs and export restrictions poses significant operational and financial risks to Dell. The increased costs and potential supply chain disruptions can impact product availability and profitability.
- **Enforcement Volatility:** *High*
  - Rapid policy changes and retaliatory measures contribute to an unpredictable trade environment. The 90-day pause for reciprocal tariffs (excluding China) indicates potential for further adjustments.
- **Stage Classification:** *Pre-Assembly*
  - The tariffs and restrictions impact upstream activities, including sourcing and manufacturing. Companies must reassess their supply chains and sourcing strategies to mitigate risks.

#### **CHIPS and Science Act<sup>161</sup>**

Enacted in August 2022, the CHIPS and Science Act allocates \$52.7 billion to bolster U.S. semiconductor manufacturing, research, and workforce development. It aims to reduce reliance on foreign chip production, particularly from East Asia, and enhance national security.

**Scope:** Direct incentives for domestic semiconductor production. Supports U.S.-based chip design, R&D, and manufacturing. The Act provides:

- \$39 billion in subsidies to incentivize the construction and expansion of semiconductor fabrication facilities in the U.S.

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<sup>161</sup> Michelle Kurilla, "What Is the CHIPS Act?" Council on Foreign Relations, April 29, 2024, <https://www.cfr.org/in-brief/what-chips-act>.



- \$11 billion for R&D initiatives, including the establishment of a National Semiconductor Technology Center.
- A 25% Advanced Manufacturing Investment Tax Credit (AMITC) under Section 48D of the Internal Revenue Code for investments in semiconductor manufacturing and equipment.

Recent developments include:

In early 2025, President Trump’s administration signaled intentions to renegotiate terms of the CHIPS and Science Act awards.<sup>162</sup> This includes potential delays in disbursements and a review of conditions such as requirements for unionized labor and affordable childcare provisions. Additionally, the administration has expressed concerns over companies receiving CHIPS Act subsidies while expanding operations in countries of concern, notably China.

#### **Timeline:**

- Signed into law: August 9, 2022
- Funding disbursement: 2023–2026, with ongoing grant applications and project approvals

#### **Implications:**

- Supply Chain Diversification: Dell has directed suppliers to diversify fabrication and backend facilities by the end of 2024 to enhance supply chain resilience.
- Compliance with Guardrails: Recipients of CHIPS Act funding must adhere to restrictions, including prohibitions on expanding semiconductor manufacturing in countries of concern (e.g., China) for 10 years post-award.
- Data Sharing and Reporting: Dell must comply with data-sharing requirements and other funding terms to maintain eligibility.

#### **Penalties:**

- Funding Clawback: Non-compliance can lead to the recovery of up to the full amount of federal financial assistance received.
- Loss of Tax Incentives: Violations may result in the forfeiture of the 25% investment tax credit.
- Exclusion from Future Initiatives: Non-compliant entities may be barred from future public-private partnerships and federal support programs.

#### **Evaluation:**

- **Status:** *Effective*
  - Enacted on August 9, 2022, the CHIPS and Science Act remains a cornerstone of U.S. industrial policy. As of early 2025, the Biden administration has finalized

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<sup>162</sup> Mike Stone, Fanny Potkin, and Wen-Yee Lee, “Trump Prepares to Change US CHIPS Act Conditions, Sources Say,” Reuters, February 13, 2025, <https://www.reuters.com/technology/trump-prepares-change-us-chips-act-conditions-sources-say-2025-02-13/>.

several significant grant agreements under the Act, including a \$7.86 billion award to Intel for projects in Arizona, New Mexico, Ohio, and Oregon, and a \$1.5 billion award to GlobalFoundries for expansions in New York and Vermont. These developments indicate active implementation and ongoing commitment to bolstering domestic semiconductor capabilities.

- **Severity: High**

The Act imposes substantial obligations on recipients of its funding. Companies like Dell must ensure compliance with stringent conditions, such as:

- Guardrails on Foreign Investments: Recipients are prohibited from expanding semiconductor manufacturing in countries of concern, notably China, for 10 years post-award.
- Clawback Provisions: Non-compliance can lead to the recovery of up to the full amount of federal financial assistance received.
- Loss of Tax Incentives: Violations may result in the forfeiture of the 25% Advanced Manufacturing Investment Tax Credit.

These provisions underscore the high stakes for companies engaged in semiconductor manufacturing and supply chains.

- **Enforcement Volatility: High**

- The enforcement landscape is dynamic, with evolving regulations and administrative priorities. For instance, in September 2023, the Department of Commerce finalized rules to prevent the improper use of CHIPS Act funding, detailing prohibited activities and defining terms such as “material expansion.” Additionally, the incoming Trump administration in early 2025 has signaled intentions to renegotiate terms of the CHIPS Act awards, potentially affecting disbursements and conditions tied to labor and childcare provisions. Such developments indicate a high degree of enforcement volatility.

- **Stage Classification: Pre-Assembly**

- The Act primarily impacts upstream planning, investment decisions, and supply chain configurations. Companies must assess and adapt their strategies early in the production process to align with the Act’s requirements and to mitigate risks associated with compliance and funding eligibility.

## **USGS Critical Minerals List**<sup>163164165</sup>

The 2022 Critical Minerals List, released by the U.S. Geological Survey (USGS) on February 22, 2022, identifies 50 non-fuel mineral commodities essential to the U.S. economy and national

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<sup>163</sup> U.S. Geological Survey, “U.S. Geological Survey Releases 2022 List of Critical Minerals,” last modified February 22, 2022, <https://www.usgs.gov/news/national-news-release/us-geological-survey-releases-2022-list-critical-minerals>.

<sup>164</sup> U.S. Geological Survey, “What are Critical Minerals?” last modified November 1, 2024, <https://www.usgs.gov/programs/mineral-resources-program/science/what-are-critical-minerals-o>.

<sup>165</sup> Linda R. Rowan, *Critical Mineral Resources: National Policy and Critical Minerals List*, Congressional Research Service, February 21, 2025, <https://crsreports.congress.gov/product/pdf/R/R47982/3>.

security. This list, mandated by the Energy Act of 2020, is subject to review every three years to assess mineral criticality based on supply chain vulnerabilities and economic importance.

**Scope:**

The list encompasses minerals vital for various sectors, including:

- Clean energy technologies: e.g., lithium, cobalt, and rare earth elements for batteries and wind turbines.
- Defense and aerospace: e.g., titanium and beryllium for aircraft and missile systems.
- Electronics and telecommunications: e.g., gallium and germanium for semiconductors and fiber optics.
- Industrial applications: e.g., barite and fluorspar for drilling and metallurgy.
- Notably, the 2022 update added nickel and zinc due to their growing importance, while helium, potash, rhenium, and strontium were removed based on revised assessments.

Recent developments include:

In April 2025, President Donald Trump initiated a national security investigation under Section 232 of the Trade Expansion Act of 1962, targeting all U.S. critical mineral imports.<sup>166</sup> This probe aims to assess the implications of reliance on foreign sources, particularly China, for processed critical minerals and their derivative products. The investigation could lead to the imposition of tariffs or other trade restrictions to bolster domestic supply chains.

**Timeline:**

- February 24, 2022: Publication of the final list in the Federal Register.
- Every 3 years: Mandated review and update cycle as per the Energy Act of 2020.

**Implications:**

Given Dell's global supply chain and reliance on critical minerals for manufacturing electronics, the company must:

- Reassess Sourcing Strategies: Diversify suppliers to reduce dependence on foreign sources, especially those from countries subject to potential tariffs or trade restrictions.
- Enhance Traceability: Implement robust traceability systems to ensure compliance with U.S. regulations and to respond swiftly to any changes in trade policies.
- Monitor Regulatory Changes: Stay informed about developments related to the USGS Critical Minerals List and associated trade policies to anticipate and mitigate risks.

**Penalties:**

- Direct Penalties: The USGS list itself does not impose penalties.
- Indirect Consequences: Non-compliance with associated regulations (e.g., environmental standards, trade restrictions) can lead to:

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<sup>166</sup> White & Case LLP, "President Trump Orders Section 232 Investigation on Critical Minerals and Derivative Products," last modified April 17, 2025, <https://www.whitecase.com/insight-alert/president-trump-orders-section-232-investigation-critical-minerals-and-derivative>.

- Loss of Federal Funding or Contracts: Ineligibility for programs under the Infrastructure Investment and Jobs Act (IIJA) and the CHIPS and Science Act.
- Trade Restrictions: Exposure to tariffs or import limitations resulting from national security investigations.
- Reputational Damage: Negative publicity affecting market position and investor relations.

#### **Evaluation:**

- **Status:** *Effective*

- The 2022 Critical Minerals List was published by the U.S. Geological Survey (USGS) on February 22, 2022, as mandated by the Energy Act of 2020. This list is reviewed and updated every three years to reflect current data on supply, demand, and policy priorities. As of April 2025, the list remains in effect, with the next review anticipated in 2025.

- **Severity:** *Medium*

While inclusion on the list does not impose direct legal obligations, it significantly influences federal actions and policies. For companies like Dell, reliance on minerals from countries with potential trade restrictions, such as China, could lead to:

- Ineligibility for Federal Funding or Contracts: Non-compliance with associated regulations may result in exclusion from programs under the Infrastructure Investment and Jobs Act (IIJA) and the CHIPS and Science Act.
- Trade Restrictions: Exposure to tariffs or import limitations resulting from national security investigations.
- Reputational Damage: Negative publicity affecting market position and investor relations.

- **Enforcement Volatility:** *High*

- The list is subject to change based on geopolitical dynamics and trade policy shifts. For instance, in April 2025, a national security investigation under Section 232 of the Trade Expansion Act of 1962 was initiated, targeting all U.S. critical mineral imports, particularly from China. Such developments can lead to rapid changes in trade policies and enforcement actions.

- **Stage Classification:** *Pre-Assembly*

- The list primarily impacts upstream activities, including mineral sourcing and processing. Dell must assess and adapt their supply chains early in the production process to mitigate risks associated with critical mineral dependencies.

### **Infrastructure Investment and Jobs Act (IIJA)**<sup>167168</sup>

Also known as the Bipartisan Infrastructure Law (BIL), the IIJA was signed into law by President Joe Biden on November 15, 2021, to bolster U.S. infrastructure across transportation, energy, and industrial sectors. A critical priority of the act is reducing dependency on foreign critical mineral supply chains, particularly for energy technologies and defense. The act allocates over \$7 billion to support mining, processing, recycling, and sustainable production of critical minerals like lithium, cobalt, nickel, and graphite<sup>169</sup>.

**Scope:** Supports U.S. mining, processing, and recycling infrastructure. Focused on strengthening domestic sourcing, especially for tech-related metals (e.g., lithium, cobalt). The IIJA provides funding for programs and initiatives to support the development of domestic supply chains for these minerals. It also includes “Buy America” requirements, which prioritize the use of domestically produced goods and materials in projects funded by the act<sup>170</sup>. This can incentivize the development of domestic processing and manufacturing capacity for critical minerals.

The IIJA supports the development of:

- Domestic mining of critical minerals
- Commercial-scale processing facilities
- Recycling infrastructure for end-of-life batteries and related tech
- Workforce training in the critical minerals sector

It includes “Buy America” and “Build America, Buy America” (BABA) provisions, which prioritize domestically produced materials—including steel, iron, and critical minerals—in federally funded infrastructure projects. These sourcing rules are enforced by federal agencies like the Department of Transportation (DOT) and Department of Energy (DOE).

### **Timeline:**

- Enacted: November 15, 2021
- Funding rollout and program implementations are ongoing through multiple federal grant programs such as:
  - DOE’s Battery Materials Processing and Battery Manufacturing Program
  - Defense Production Act (DPA) allocations authorized under IIJA
  - DOE Office of Manufacturing and Energy Supply Chains (MESC) initiatives

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<sup>167</sup> U.S. Congress, House, *Infrastructure Investment and Jobs Act*, H.R. 3684, 117th Cong., 1st sess., introduced June 4, 2021, <https://www.congress.gov/bill/117th-congress/house-bill/3684>.

<sup>168</sup> Government Finance Officers Association, “*Infrastructure Investment and Jobs Act (IIJA) Implementation Resources*,” accessed May 16, 2025, <https://www.gfoa.org/the-infrastructure-investment-and-jobs-act-iija-was>.

<sup>169</sup> U.S. Environmental Protection Agency, “*Solid Waste Infrastructure for Recycling Grant Program*,” last updated May 8, 2025, <https://www.epa.gov/infrastructure/solid-waste-infrastructure-recycling-grant-program>.

<sup>170</sup> U.S. Department of Commerce, “*Build America Buy America*,” <https://www.commerce.gov/oam/build-america-buy-america>.

## Implications:

Companies in technology and manufacturing sectors, including Dell, must:

- Transition to U.S.-based or allied mineral sourcing
- Comply with Buy America requirements for eligibility in federally funded programs
- Invest in traceability solutions (e.g., blockchain, supplier audits) to meet future compliance and ESG demands

## Penalties:

While the IIJA does not create a centralized penalty framework, it delegates enforcement to relevant agencies. The penalties are indirect but significant:

- Ineligibility for federal grants and contracts due to non-compliance with Buy America/BABA requirements
- Debarment for violations of sourcing laws (e.g., Buy American Act), as shown in cases like Novum Structures LLC, which paid \$3 million in fines and was debarred for misrepresenting foreign-made construction materials as U.S.-made<sup>171</sup>
- Civil and criminal liability under the False Claims Act if a company falsely certifies compliance

## Evaluation:

- **Status:** *Effective*
  - The IIJA has been in effect since November 15, 2021, with ongoing implementation through various federal grant programs. Federal agencies, including the Department of Energy (DOE) and Department of Transportation (DOT), are actively rolling out funding and initiatives to bolster domestic infrastructure and supply chains.
- **Severity:** *Medium*
  - Non-compliance with the IIJA's "Buy America" provisions can lead to significant consequences, such as ineligibility for federal grants and contracts. For example, companies failing to adhere to these requirements may be debarred from federally funded projects, as seen in cases like Novum Structures LLC, which faced fines and debarment for misrepresenting foreign-made materials as U.S.-made. However, the act does not impose direct financial penalties, hence the classification as medium severity.
- **Enforcement Volatility:** *High*
  - The enforcement landscape is dynamic, with increasing scrutiny on compliance. The Federal Highway Administration (FHWA) has announced the termination of longstanding waivers, such as the Manufactured Products General Waiver, effective October 1, 2025, and the implementation of a 55% domestic content requirement by October 1, 2026. These changes indicate a tightening of

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<sup>171</sup> U.S. Department of Justice, "Wisconsin Architectural Firm to Plead Guilty and Pay \$3 Million to Resolve Criminal and Civil Claims," last modified January 5, 2016, <https://www.justice.gov/archives/opa/pr/wisconsin-architectural-firm-plead-guilty-and-pay-3-million-to-resolve-criminal-and-civil-claims>.

enforcement and a move towards stricter compliance standards.

- **Stage Classification:** *Pre-Assembly*
  - The IIJA's provisions primarily impact the early stages of the supply chain, including sourcing and infrastructure design planning. Companies must ensure that materials and components used in federally funded projects comply with domestic content requirements from the outset to avoid disruptions and ensure eligibility for funding.

### **Executive Order 14017: America's Supply Chains**<sup>172173</sup>

Requires federal reviews to identify and reduce vulnerabilities in supply chains. Mandates 100-day supply chain reviews in critical sectors including semiconductors, critical minerals, and tech.

Signed by President Joe Biden on February 24, 2021, Executive Order 14017 was issued in response to growing concerns over economic and national security risks due to fragile and overly concentrated global supply chains. The EO mandates comprehensive federal reviews to identify vulnerabilities and propose strategies to secure U.S. supply chains in critical sectors. These reviews aim to strengthen domestic manufacturing, protect national security, and support economic resilience.

**Scope:** Encourages supply chain diversification and national security alignment (National supply chain resiliency strategy)

EO 14017 focuses on strategic sectors critical to economic and national security. It directed 100-day reviews and one-year reviews in the following key areas:

- Semiconductors and advanced packaging
- Large-capacity batteries (e.g., EV batteries)
- Critical minerals and materials
- Pharmaceuticals and active pharmaceutical ingredients (APIs)
- Defense industrial base
- Energy and transportation systems

The EO resulted in an inter-agency effort led by the White House, Department of Commerce, Department of Energy, Department of Defense, and Department of Health and Human Services, among others. It encourages:

- Supply chain diversification
- Domestic production capacity

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<sup>172</sup> Joseph R. Biden, Jr., "America's Supply Chains," Executive Order 14017, *Federal Register* 86, no. 39 (March 1, 2021): 11849–11854,

<https://www.federalregister.gov/documents/2021/03/01/2021-04280/americas-supply-chains>.

<sup>173</sup> Biden-Harris Administration, *Executive Order on America's Supply Chains: A Year of Action and Progress*, February 2022,

<https://bidenwhitehouse.archives.gov/wp-content/uploads/2022/02/Capstone-Report-Biden.pdf>.

- Data-driven risk management
- Allied cooperation in global sourcing

**Timeline:**

- Issued: February 24, 2021
- 100-day reviews completed: June 2021
- One-year sectoral reviews released: February 2022
- Ongoing implementation: Influencing legislation (e.g., CHIPS Act, IIJA, IRA) and agency procurement standards

**Implications:** Traceability systems, risk dashboards, supplier mapping.

Though EO 14017 is not a regulatory instrument, it has broad downstream effects, particularly for firms engaged in:

- Federal procurement or grant programs
- Defense and tech supply chains
- Critical mineral sourcing or processing

Dell must proactively:

- Map suppliers and sub-tiers
- Implement traceability tools (e.g., digital ledgers, blockchain, ESG reporting)
- Develop resilience dashboards and scenario planning models
- Align with federal and allied nation sourcing initiatives to maintain eligibility for funding and partnership opportunities

**Penalties:** Not regulatory per se, but affects public-private collaborations (non-compliance with downstream federal requirements may impact federal contracts)

- No direct penalties under EO 14017, as it is a strategic planning directive
- However, non-alignment with its goals can impact:
  - Eligibility for federal contracts and funding (especially under the CHIPS Act, DoD programs, and DOE supply chain initiatives)
  - Access to public-private partnerships and incentive programs
- Violations of sourcing-related acts (e.g., Buy America, Defense Production Act compliance) trigger enforcement by agencies like DoD, DOE, and DHS

**Evaluation:**

- **Status:** *Effective*
  - Issued on February 24, 2021, EO 14017 remains in effect and continues to guide U.S. supply chain policy. It has led to significant initiatives, including the establishment of the White House Council on Supply Chain Resilience in June 2024, which coordinates efforts across federal agencies to strengthen supply chain resilience.
- **Severity:** *Medium*



- While EO 14017 does not impose direct legal obligations on private entities, it significantly influences the policy environment. Non-alignment with its objectives can affect Dell's eligibility for federal contracts, grants, and participation in public-private partnerships, especially in sectors prioritized by the order. For instance, companies involved in federal procurement or grant programs may face challenges if they do not adhere to the supply chain resilience goals outlined in EO 14017.
- **Enforcement Volatility: High**
  - Policy emphasis shifts rapidly in response to geopolitical dynamics (e.g., China, Ukraine, rare earth trade). The policy landscape under EO 14017 is dynamic, with frequent updates and new initiatives introduced in response to evolving geopolitical and economic conditions. The establishment of the White House Council on Supply Chain Resilience and the requirement for quadrennial supply chain reviews exemplify the ongoing and adaptive nature of enforcement and policy development under this executive order.
- **Stage Classification: Pre-Assembly**
  - EO 14017 primarily impacts the upstream stages of the supply chain, emphasizing the importance of sourcing, supplier diversification, and infrastructure planning. Companies are encouraged to assess and enhance the resilience of their supply chains before the assembly stage to mitigate risks associated with supply disruptions and to align with federal resilience objectives.

## 2. Forced Labor Prevention & Ethical Sourcing

### **Uyghur Forced Labor Prevention Act**<sup>174175176</sup>

Enacted on December 23, 2021, and effective since June 21, 2022, the UFLPA establishes a rebuttable presumption that goods produced wholly or in part in China's Xinjiang Uyghur Autonomous Region (XUAR), or by entities associated with forced labor, are prohibited from entering the U.S. market unless clear and convincing evidence proves otherwise. This legislation aims to prevent the importation of products made with forced labor, particularly involving Uyghur and other minority groups in China.

**Scope:** The UFLPA applies across all sectors, including electronics, textiles, solar components, automotive parts, and industrial materials. As of January 15, 2025, the Department of Homeland Security (DHS) expanded the UFLPA Entity List by adding 37 Chinese companies, bringing the total to 144 entities. These additions encompass major suppliers in textiles, mining, solar energy, and critical minerals.

<sup>174</sup> U.S. Congress, House, *Uyghur Forced Labor Prevention Act*, H.R. 1155, 117th Cong., 1st sess., introduced February 18, 2021, <https://www.congress.gov/bill/117th-congress/house-bill/1155>.

<sup>175</sup> U.S. Customs and Border Protection, "Uyghur Forced Labor Prevention Act Statistics," accessed May 16, 2025, <https://www.cbp.gov/newsroom/stats/trade/uyghur-forced-labor-prevention-act-statistics>.

<sup>176</sup> U.S. Department of Labor, "Uyghur Forced Labor Prevention Act," accessed May 16, 2025, <https://www.dol.gov/agencies/ilab/uyghur-forced-labor-prevention-act>.

**Timeline:**

- December 23, 2021: UFLPA signed into law.
- June 21, 2022: Law becomes effective.
- January 15, 2025: DHS adds 37 entities to the UFLPA Entity List, totaling 144 entities.
- April 2025: CBP reports over 10,000 shipments detained, valued at more than \$3.6 billion.

**Implications:**

Given Dell's global supply chain, particularly its reliance on Chinese manufacturing and materials, the UFLPA has significant implications:

- **Supply Chain Audits:** Dell must conduct comprehensive audits to ensure no part of its supply chain is linked to forced labor in the XUAR.
- **Supplier Engagement:** Engage with suppliers to verify labor practices and ensure compliance with UFLPA requirements.
- **Documentation and Traceability:** Maintain detailed records to provide clear and convincing evidence that products are not produced with forced labor.
- **Risk Assessment:** Regularly assess risks associated with suppliers and regions, adapting procurement strategies accordingly.

**Penalties:**

Non-compliance with the UFLPA can result in:

- **Detention of Shipments:** CBP may detain goods suspected of being produced with forced labor.
- **Seizure and Forfeiture:** If evidence is insufficient, goods may be seized and forfeited.
- **Civil Penalties:** Importers may face civil penalties, including liquidated damages.
- **Reputational Damage:** Public disclosure of violations can harm brand reputation.

**Evaluation:**

- **Status:** *Effective*
  - The UFLPA is actively enforced, with CBP detaining shipments and DHS updating the Entity List to include companies linked to forced labor.
- **Severity:** *High*
  - Non-compliance can lead to significant operational disruptions, legal penalties, and loss of market access, especially for companies, including Dell, heavily reliant on Chinese supply chains.
- **Enforcement Volatility:** *High*
  - The enforcement landscape is dynamic, with frequent updates to the Entity List and increased scrutiny across various industries, including electronics and automotive sectors.
- **Stage Classification:** *Pre-Assembly*

- The UFLPA impacts upstream activities, necessitating due diligence in sourcing and procurement to ensure compliance before goods enter the production phase.

### **Tariff Act of 1930 (Section 307)**<sup>177178</sup>

Section 307 of the Tariff Act of 1930 (19 U.S.C. § 1307) prohibits the importation of goods mined, produced, or manufactured wholly or in part by forced labor, including convict, indentured, and forced child labor. U.S. Customs and Border Protection (CBP) enforces this provision through the issuance of Withhold Release Orders (WROs) and Findings. Since the removal of the “consumptive demand” exception in 2016, enforcement has intensified, particularly with the enactment of the Uyghur Forced Labor Prevention Act (UFLPA) in 2021, which reinforces Section 307 by establishing a rebuttable presumption that goods from China’s Xinjiang region are made with forced labor.

**Scope:** Section 307 applies to all U.S. imports, regardless of origin or industry. CBP has issued WROs and Findings across various sectors, including agriculture (e.g., cotton, palm oil), mining and minerals (e.g., aluminum, gold), manufacturing (e.g., textiles, electronics), and seafood (e.g., shrimp, tuna).

Recent developments include:

- As of early 2025, CBP reports 51 active WROs and 9 active Findings.
- From October 1, 2024, to January 1, 2025, CBP detained 2,501 shipments valued at over \$55.53 million under forced labor enforcement actions.
- The Forced Labor Enforcement Task Force (FLETF) has expanded the UFLPA Entity List to include 109 entities, emphasizing high-priority sectors such as apparel, cotton, silica-based products, aluminum, polyvinyl chloride, and seafood.
- CBP has clarified that importers who are Customs Trade Partnership Against Terrorism (CTPAT) Trade Compliance partners in good standing may utilize Foreign Trade Zones (FTZs) for the storage of goods subject to potential forced labor enforcement action.

### **Timeline:**

- 1930: Enactment of the Tariff Act, including Section 307.
- 2016: Removal of the “consumptive demand” exception, strengthening enforcement capabilities.
- 2021: Passage of the Uyghur Forced Labor Prevention Act (UFLPA), reinforcing Section 307 by establishing a rebuttable presumption that goods from China’s Xinjiang region are made with forced labor.
- 2022: Implementation of the UFLPA, enhancing CBP’s enforcement mechanisms.

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<sup>177</sup> Christopher A. Casey, Cathleen D. Cimino-Isaacs, and Michael A. Weber, *Section 307 and Imports Produced by Forced Labor*, Congressional Research Service, December 10, 2024, <https://crsreports.congress.gov/product/pdf/IF/IF11360>.

<sup>178</sup> U.S. Code, Title 19, § 1307, *Convict-made goods; importation prohibited*, enacted 1930, <https://www.govinfo.gov/content/pkg/USCODE-2011-title19/html/USCODE-2011-title19-chap4-subtitle-II-partI-sec1307.htm>.

- 2024-2025: Continued expansion of the UFLPA Entity List and increased detentions of shipments under forced labor enforcement actions.

### **Implications:**

Given Dell's global supply chain, particularly its reliance on manufacturing and materials from regions with reported forced labor concerns, the company must:

- **Conduct Comprehensive Supply Chain Audits:** Ensure no part of the supply chain is linked to forced labor.
- **Implement Traceability Systems:** Utilize technologies like blockchain to track the origin of materials.
- **Engage in Supplier Due Diligence:** Work closely with suppliers to verify labor practices.
- **Stay Informed on WROs and Findings:** Monitor CBP announcements to avoid sourcing from entities under enforcement.

### **Penalties:**

Non-compliance with Section 307 can result in:

- **Detention or Seizure of Goods:** Shipments may be held or confiscated at U.S. ports.
- **Financial Losses:** Costs associated with detained goods and potential loss of market access.

Reputational Damage: Public disclosure of violations can harm brand image.

### **Evaluation:**

- **Status:** *Effective*
  - Section 307 is actively enforced by CBP, with ongoing issuance of WROs and Findings.
- **Severity:** *High*
  - **Operational Impact:** Goods suspected of being produced with forced labor can be detained or seized by U.S. Customs and Border Protection (CBP), leading to supply chain disruptions and potential loss of market access.
  - **Financial Penalties:** While specific civil penalties under Section 307 are not frequently imposed, violations can result in substantial financial losses due to detained goods and associated costs.
  - **Reputational Risk:** Public disclosure of violations can harm a company's brand image and investor confidence.
- **Enforcement Volatility:** *Medium*
  - Enforcement is consistent, but the addition of new WROs and Findings can occur with limited notice, requiring companies to stay vigilant.
- **Stage Classification:** *Pre-Assembly*
  - The regulation impacts upstream supply chain activities, necessitating early-stage compliance measures.

## **3. Tech Transfer & Investment Restrictions**

## **Outbound Investment Restrictions**<sup>179180</sup>

On October 28, 2024, the U.S. Department of the Treasury issued a final rule implementing Executive Order 14105, establishing the Outbound Investment Security Program. Effective January 2, 2025, this program restricts U.S. investments in Chinese entities involved in semiconductors, quantum information technologies, and artificial intelligence. The goal is to prevent U.S. capital and expertise from enhancing China's military, intelligence, surveillance, or cyber capabilities.

**Scope:** The regulations apply to U.S. persons and their controlled foreign entities engaging in transactions with Chinese entities involved in:

- Semiconductors and microelectronics
- Quantum information technologies
- Artificial intelligence systems

Transactions subject to these rules include equity investments, joint ventures, and certain debt financings. Some transactions are outright prohibited, while others require prior notification to the Treasury Department.

### **Timeline:**

- August 9, 2023: Executive Order 14105 issued.
- October 28, 2024: Final rule published by the Treasury Department.
- January 2, 2025: Regulations become effective.

### **Implications:**

Dell's operations, such as its AI R&D center in Shenzhen, may be impacted by these regulations. The company must assess whether its investments or collaborations fall under prohibited or notifiable transactions. Compliance may require restructuring existing operations, divesting from certain ventures, or enhancing due diligence processes to ensure adherence to the new rules.

### **Penalties**<sup>181182</sup>:

Violations of the Outbound Investment Security Program can result in:

- Civil penalties: Fines up to \$368,136 or twice the value of the transaction, whichever is greater.

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<sup>179</sup> U.S. Department of the Treasury, "Outbound Investment Security Program," accessed May 16, 2025, <https://home.treasury.gov/policy-issues/international/outbound-investment-program>.

<sup>180</sup> Latham & Watkins LLP, "Final US Outbound Investment Rules to Be Effective January 2, 2025: Key Questions Answered," November 8, 2024, <https://www.lw.com/admin/upload/SiteAttachments/Final-US-Outbound-Investment-Rules-Effective-January-2025-Key-Questions-Answered.pdf>.

<sup>181</sup> Washington Trade & Tariff Letter, "Outbound Investment Bill Revived," accessed May 16, 2025, <https://wttonline.com/stories/outbound-investment-bill-revived>.

<sup>182</sup> Hunton Andrews Kurth LLP, "New Outbound Investment Rules Restrict US Investment in China," November 19, 2024, <https://www.hunton.com/insights/legal/new-outbound-investment-rules-restrict-us-investment-in-china>.

- Criminal penalties: Fines up to \$1 million and imprisonment for up to 20 years for willful violations.
- Divestment: The Treasury Department may nullify or require divestment of prohibited transactions.

#### **Evaluation:**

- **Status:** *Effective*
  - The regulations have been in force since January 2, 2025, with active enforcement by the Treasury Department.
- **Severity:** *Medium*
  - Violations of the Outbound Investment Security Program can result in:
    - Financial Penalty: Civil penalties up to the greater of \$368,136 or twice the value of the violating transaction.
    - Criminal Penalty: For willful violations, fines up to \$1 million and imprisonment for up to 20 years.

These penalties fall within the *Medium* severity classification, which includes financial penalties between \$500,001 and \$5 million, temporary suspension of specific activities, compliance overhauls, sectoral bans, government restrictions, and industry-specific blacklisting or public scrutiny.
- **Enforcement Volatility:** *High*
  - The enforcement landscape is dynamic due to ongoing legislative developments that may expand or modify the scope of restrictions and potential for rapid policy shifts in response to geopolitical events, particularly concerning U.S.-China relations.
- **Stage Classification:** *Pre-Assembly*
  - The regulations primarily affect upstream activities, including investment decisions, strategic partnerships, and R&D operations.

#### **4. Climate & ESG (State-Level)**

##### **Texas Anti-ESG Regulations (Senate Bill 13)**<sup>183184</sup>

Enacted in 2021, Texas Senate Bill 13 (SB 13) prohibits state agencies and political subdivisions from contracting with or investing in companies that, according to the state, “boycott” fossil fuel companies. The law mandates that financial firms and other businesses verify they do not engage in such boycotts as a condition for securing contracts valued at \$100,000 or more with state entities. SB 13 reflects Texas’s broader stance against Environmental, Social, and Governance (ESG) investment principles that are perceived to disadvantage the state’s vital oil and gas industries.

**Scope:** SB 13 applies to:

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<sup>183</sup> Spencer Grubbs, “Fighting a Fossil Fuels Boycott,” *Fiscal Notes*, Texas Comptroller of Public Accounts, May 2023, <https://comptroller.texas.gov/economy/fiscal-notes/archive/2023/may/fossil-fuels/>.

<sup>184</sup> Kayla Guo, “Group Sues Texas over Law Banning State Business with Firms ‘Boycotting’ Fossil Fuels,” *The Texas Tribune*, August 29, 2024, <https://www.texastribune.org/2024/08/29/texas-renewable-investment-lawsuit-esg/>.

- **State Contracts:** Companies seeking contracts of \$100,000 or more with Texas state agencies or political subdivisions must provide written verification that they do not boycott energy companies.
- **State Investments:** State pension funds and other public investment entities are required to divest from financial companies identified by the Texas Comptroller as boycotting energy companies, unless such divestment would violate fiduciary duties.

The Texas Comptroller maintains and updates a list of financial companies deemed to boycott energy companies, impacting their eligibility for state contracts and investments.

### **Timeline:**

- **September 1, 2021:** SB 13 becomes effective.
- **August 2022:** Texas Comptroller Glenn Hegar publishes an initial list of financial firms considered to be boycotting fossil fuels, including major institutions like BlackRock and Credit Suisse.
- **August 2024:** The American Sustainable Business Council files a federal lawsuit challenging SB 13, alleging it violates the First and Fourteenth Amendments by discriminating against companies based on their ESG policies.

### **Implications:**

As a company with operations in Texas, Dell must navigate the complexities of SB 13 to maintain eligibility for state contracts and investments:

- **Contractual Compliance:** Dell must ensure that its ESG policies and public statements do not conflict with SB 13's requirements to avoid being classified as boycotting energy companies.
- **Supply Chain Considerations:** Dell should assess its suppliers and partners for compliance with SB 13 to prevent indirect violations that could jeopardize state contracts.
- **Policy Transparency:** Dell may need to review and possibly adjust its ESG disclosures and marketing materials to align with SB 13's stipulations while balancing commitments to broader ESG goals.

### **Penalties:**

- **Contractual Exclusion:** Companies identified as boycotting energy companies are barred from entering into contracts of \$100,000 or more with Texas state agencies and political subdivisions.
- **Investment Divestment:** State investment entities are required to divest from listed companies, potentially affecting those companies' access to significant public funds.
- **Legal Challenges:** Companies may face legal disputes or challenges if they are listed as boycotters, as evidenced by ongoing litigation against SB 13.

### **Evaluation:**

- **Status:** *Effective*

- SB 13 has been in effect since September 1, 2021, with active enforcement by the Texas Comptroller's office, including the publication of a list of companies deemed to boycott energy companies.
- **Severity: Medium**  
Violations of SB 13 can lead to significant operational and reputational impacts:
  - Operational Impact: Companies identified as boycotting energy companies are barred from entering into contracts of \$100,000 or more with Texas state agencies and political subdivisions, which can result in the loss of substantial business opportunities within the state.
  - Reputational Risk: Being listed as a boycotter by the Texas Comptroller can lead to industry-specific blacklisting and public scrutiny. For example, BlackRock was removed from managing \$8.5 billion in assets by the Texas Permanent School Fund after being listed.

These consequences align with the criteria for medium severity, which includes temporary suspension of specific activities and industry-specific blacklisting.
- **Enforcement Volatility: Medium**
  - While enforcement has been consistent, ongoing legal challenges and political debates introduce some uncertainty regarding the law's future application and potential amendments.
- **Stage Classification: Post-Assembly**
  - SB 13 primarily affects downstream operations, particularly in sales, marketing, and public relations, where company policies and statements regarding ESG matters are scrutinized for compliance.

## ii) Emerging Regulations

### 1. Artificial Intelligence Regulation

#### **Framework for Artificial Intelligence Diffusion (BIS Interim Final Rule)**<sup>185186</sup>

On January 13, 2025, the U.S. Department of Commerce's Bureau of Industry and Security (BIS) issued an Interim Final Rule titled the "Framework for Artificial Intelligence Diffusion." This regulation aims to control the global spread of advanced artificial intelligence (AI) technologies by imposing export restrictions on certain AI model weights and advanced computing integrated circuits (ICs). The rule is designed to prevent adversaries from accessing cutting-edge AI capabilities that could pose national security risks.

<sup>185</sup> U.S. Department of Commerce, Bureau of Industry and Security, "Framework for Artificial Intelligence Diffusion," *Federal Register* 90, no. 10 (January 15, 2025): 4544–4584, <https://www.federalregister.gov/documents/2025/01/15/2025-00636/framework-for-artificial-intelligence-diffusion>.

<sup>186</sup> Perkins Coie LLP, "BIS Publishes Bold New Artificial Intelligence Diffusion Framework," March 6, 2025, <https://perkinscoie.com/insights/article/bis-publishes-bold-new-artificial-intelligence-diffusion-framework>.



**Scope:**

The rule applies to:

- **Advanced Computing ICs:** Expands controls on high-performance chips classified under Export Control Classification Numbers (ECCNs) 3A090.a and 4A090.a.
- **AI Model Weights:** A new control under ECCN 4E091 targets the model weights of certain advanced closed-weight dual-use AI models. Specifically, it applies to unpublished model weights trained on more than  $10^{26}$  computational operations.

**Timeline:**

- **January 13, 2025:** Interim Final Rule published and effective.
- **May 15, 2025:** Compliance with the rule's provisions becomes mandatory.
- **January 15, 2026:** Deadline for implementing certain security-related commitments applicable to validated end users and exports under new license exceptions.

**Implications:**

- **Export Compliance:** Companies must review and potentially adjust export practices related to advanced computing ICs and AI model weights to ensure compliance with the new licensing requirements.
- **Supply Chain Management:** Partnerships and supply chains should be evaluated to identify and mitigate risks associated with controlled items, especially when dealing with entities in countries of concern.
- **Security Measures:** Stringent security protocols must be implemented for the storage and handling of controlled AI model weights, particularly when operating in or collaborating with entities in high-risk regions.

**Penalties:**

Framework for Artificial Intelligence Diffusion is intrinsically linked to the Export Administration Regulations (EAR). The EAR provides the legal framework for controlling the export, reexport, and in-country transfer of certain items, including advanced technologies that may have national security implications.

Connection Between the Framework and EAR:

- **Legal Authority:** The EAR, under the Export Control Reform Act (ECRA) of 2018, grants BIS the authority to regulate the export of dual-use items—goods and technologies that have both civilian and military applications. The Framework introduces new controls under the EAR, specifically targeting AI model weights and advanced computing integrated circuits (ICs).
- **Export Control Classification Numbers (ECCNs):** The Framework establishes new ECCNs, such as 4E091 for AI model weights, to categorize and control the export of these advanced technologies. These classifications determine the licensing requirements and restrictions for exporting the specified items.

Violations of the Export Administration Regulations (EAR) can result in severe penalties:

- **Criminal Penalties:** Individuals or entities found guilty of willful violations may face up to 20 years of imprisonment and fines up to \$1 million per violation.

- **Administrative Penalties:** Civil penalties can include fines up to \$300,000 per violation or twice the value of the transaction, whichever is greater. Additional administrative actions may involve denial of export privileges and exclusion from U.S. government contracts.

#### **Evaluation:**

- **Status:** *Partially Effective*
  - Although the rule went into effect on January 13, 2025, compliance deadlines are staggered: most provisions become enforceable starting May 15, 2025, while key requirements for validated end-users (e.g., storage security protocols for AI model weights) do not apply until January 15, 2026. Therefore, it is currently considered partially effective, as not all provisions are yet enforceable for companies like Dell.
- **Severity:** *Medium*
  - Violations of the Export Administration Regulations (EAR), which govern the AI Diffusion framework, carry penalties that fall within the medium severity range under Dell's classification system:
    - Administrative penalties include civil fines of up to \$300,000 per violation or twice the value of the transaction, whichever is greater.
    - Criminal penalties for willful violations can include fines of up to \$1 million and imprisonment of up to 20 years.
    - Additionally, entities may face denial of export privileges, removal from validated end-user status, or exclusion from U.S. government contracts.
 These risks align with medium severity, defined as financial penalties between \$500,001 and \$5 million, temporary operational restrictions, and sector-specific legal or reputational exposure.
- **Enforcement Volatility:** *Medium*
  - BIS enforcement under the EAR has become more assertive but remains predictable within the export control domain. The AI Diffusion framework allows for license exceptions and validated user pathways, introducing some flexibility. However, the complexity and novelty of AI controls, combined with growing geopolitical tension (particularly with China), may cause periodic enforcement surges or updates.
- **Stage Classification:** *Post-Assembly*
  - The rule primarily regulates exports of final-stage technologies—namely, AI model weights and computing ICs used in deployed systems. As such, it affects Dell's product distribution and international data infrastructure, rather than raw material sourcing or early-stage component manufacturing. Therefore, it is classified as post-assembly in Dell's regulatory framework.

## **2. Climate Risk & Sustainability Disclosure**

## **The Enhancement and Standardization of Climate-Related Disclosures for Investors**<sup>187188</sup>

On March 6, 2024, the U.S. Securities and Exchange Commission (SEC) adopted the final rule titled “The Enhancement and Standardization of Climate-Related Disclosures for Investors.” This regulation mandates that large U.S. public companies disclose climate-related financial risks and greenhouse gas (GHG) emissions. However, the implementation of this rule has been delayed due to ongoing legal challenges, including a temporary stay issued by a federal appellate court.

### **Scope:**

The rule applies to all large U.S. public companies, including technology manufacturers like Dell. Key requirements include:

- GHG Emissions Disclosure: Mandatory reporting of Scope 1 and Scope 2 emissions when material. Scope 3 emissions disclosure is not required in the final rule.
- Climate-Related Risk Disclosure: Companies must disclose climate-related risks that have materially impacted, or are reasonably likely to materially impact, their business strategy, results of operations, or financial condition.
- Governance and Risk Management: Disclosure of the board’s oversight and management’s role in assessing and managing material climate-related risks.
- Financial Statement Disclosure: Information about the financial impacts of severe weather events and other natural conditions.

### **Timeline:**

- March 6, 2024: Final rule adopted by the SEC.
- Current Status: Implementation is paused due to legal challenges, including lawsuits from multiple states and entities.

### **Implications:**

- Compliance Preparation: Companies should prepare to disclose material Scope 1 and Scope 2 GHG emissions and assess climate-related risks.
- Governance Documentation: Establish and document board-level oversight and management’s role in climate risk assessment and management.
- Financial Reporting: Evaluate and disclose the financial impacts of climate-related events, such as severe weather, on financial statements.

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<sup>187</sup> U.S. Securities and Exchange Commission, “*The Enhancement and Standardization of Climate-Related Disclosures for Investors*,” Release Nos. 33-11275; 34-99678, March 6, 2024, <https://www.sec.gov/rules/regulations/2024/03/s7-10-22>.

<sup>188</sup> Securities and Exchange Commission, “*The Enhancement and Standardization of Climate-Related Disclosures for Investors; Delay of Effective Date*,” *Federal Register* 89, no. 72 (April 12, 2024): 25804–25805, <https://www.federalregister.gov/documents/2024/04/12/2024-07648/the-enhancement-and-standardization-of-climate-related-disclosures-for-investors-delay-of-effective>.

- **Legal and Reputational Risk:** Non-compliance or inadequate disclosure may lead to SEC enforcement actions and shareholder lawsuits.

### **Penalties:**

Violations of the SEC’s climate disclosure rule can result in significant consequences across regulatory, legal, and reputational domains:

- **Financial Penalties:** The SEC has demonstrated its commitment to enforcing disclosure regulations, as evidenced by recent actions. For instance, in October 2024, the SEC announced enforcement actions against several technology companies for making materially misleading disclosures regarding cybersecurity risks and intrusions. Penalties in these cases ranged from \$990,000 to \$4 million.
- **Shareholder Lawsuits:** The final rule’s limited safe harbor provisions for forward-looking statements mean that companies may be more vulnerable to shareholder lawsuits if their climate-related disclosures are deemed misleading or insufficient.

### **Evaluation:**

- **Status:** *Draft*
  - Although the rule has been finalized, its implementation is currently on hold due to legal challenges. Therefore, it is considered in a draft or pending state.
- **Severity:** *Medium*
  - Potential penalties, including substantial fines and litigation costs, align with medium severity. This encompasses financial penalties between \$500,001 and \$5 million, temporary suspension of specific activities, compliance overhauls, sectoral bans, government restrictions, and industry-specific blacklisting or public scrutiny.
- **Enforcement Volatility:** *High*
  - The enforcement landscape is currently volatile due to ongoing legal challenges and political factors influencing the rule’s future. This uncertainty contributes to a high level of enforcement volatility.
- **Stage Classification:** *Post-Assembly*
  - The rule affects companies at the post-assembly stage, requiring them to disclose information about existing operations, governance structures, and financial impacts related to climate risks.

### **California SB 253 – Climate Corporate Data Accountability Act (CCDAA)<sup>189190</sup>**

California Senate Bill 253 (SB 253), enacted in October 2023, mandates comprehensive greenhouse gas (GHG) emissions disclosures from large corporations operating in the state. This

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<sup>189</sup> Persefoni, “California SB 253 and SB 261: What Businesses Need to Know,” January 24, 2025, <https://www.persefoni.com/blog/california-sb253-sb261>.

<sup>190</sup> Yorke Engineering, “SB 253: Climate Corporate Data Accountability Act,” updated April 5, 2024, <https://yorkeengr.com/regulatory-updates/sb-253-climate-corporate-data-accountability-act>.

legislation positions California at the forefront of corporate climate accountability in the United States.

**Scope:** SB 253 applies to U.S.-based public and private companies with total annual revenues exceeding \$1 billion that conduct business in California. Affected entities are required to annually disclose their Scope 1 (direct), Scope 2 (indirect from purchased energy), and Scope 3 (indirect from value chain) GHG emissions, adhering to the Greenhouse Gas Protocol standards.

Recent developments include:

- **Regulatory Timeline Adjustment:** SB 219, enacted in September 2024, extended the deadline for the California Air Resources Board (CARB) to adopt implementing regulations from January 1, 2025, to July 1, 2025.
- **Enforcement Discretion:** In December 2024, CARB issued an enforcement notice indicating it will exercise discretion for the first reporting year (2026), refraining from penalizing companies for incomplete Scope 1 and 2 emissions data, provided they demonstrate good faith efforts toward compliance.

**Timeline:**

- 2023: SB 253 signed into law.
- July 1, 2025: Deadline for CARB to finalize implementing regulations.
- 2026: First disclosures of Scope 1 and 2 emissions for fiscal year 2025 due.
- 2027: First disclosures of Scope 3 emissions for fiscal year 2026 due.
- 2030: Transition from limited to reasonable assurance for Scope 3 emissions disclosures.

**Implications:**

As a multinational corporation with operations in California, Dell must:

- **Establish Robust Emissions Tracking:** Implement systems to accurately measure and report Scope 1, 2, and 3 emissions.
- **Engage Supply Chain Partners:** Collaborate with suppliers to gather necessary data for Scope 3 emissions reporting.
- **Prepare for Third-Party Assurance:** Arrange for independent verification of emissions data, transitioning to reasonable assurance by 2030.
- **Monitor Regulatory Developments:** Stay informed on CARB's final regulations and adjust compliance strategies accordingly.

**Penalties:**

Non-compliance with SB 253 can result in civil penalties of up to \$500,000 per reporting year. However, CARB has indicated it will not enforce penalties for incomplete Scope 1 and 2 disclosures in the first reporting year (2026), provided companies demonstrate good faith efforts toward compliance.

**Evaluation:**

- **Status:** *Partially Effective*

- SB 253 was enacted in October 2023 and mandates annual disclosure of Scope 1, 2, and 3 greenhouse gas (GHG) emissions for companies with over \$1 billion in annual revenue doing business in California. However, as of April 2025, the California Air Resources Board (CARB) has not finalized the implementing regulations, with a deadline extended to July 1, 2025, under SB 219. Additionally, CARB has issued an enforcement notice indicating it will exercise enforcement discretion for the first reporting cycle in 2026. Therefore, while the law is in effect, its full implementation is pending, rendering it partially effective.
- **Severity: Low**
  - Non-compliance with SB 253 can result in civil penalties of up to \$500,000 per reporting year. However, for the initial reporting period in 2026, CARB has stated it will not enforce penalties for incomplete Scope 1 and 2 emissions disclosures. This enforcement discretion, coupled with the relatively moderate financial penalties, positions the severity of non-compliance as low.
- **Enforcement Volatility: Low**
  - CARB has provided clear guidance on its enforcement approach for the initial reporting cycle, showing a consistent and predictable enforcement landscape. While there is some political pressure for stricter enforcement, CARB's current stance suggests low volatility in enforcement practices.
- **Stage Classification: Post-Assembly**
  - SB 253 primarily impacts downstream operations, focusing on emissions resulting from product use, distribution, and end-of-life stages. The requirement for comprehensive Scope 3 emissions reporting necessitates engagement with the entire value chain, including suppliers and customers, to accurately account for indirect emissions.

### **California SB 261 - Climate-Related Financial Risk Disclosures<sup>191192</sup>**

Enacted in October 2023, California Senate Bill 261 (SB 261) mandates that large corporations disclose their climate-related financial risks and the strategies they have adopted to mitigate these risks. This legislation aligns with the Task Force on Climate-related Financial Disclosures (TCFD) framework, aiming to enhance transparency and inform stakeholders about the financial implications of climate change on businesses.

**Scope:** SB 261 applies to U.S.-based entities with total annual revenues exceeding \$500 million that do business in California. Covered entities are required to prepare a biennial report disclosing:

<sup>191</sup> Workiva, "Executive Summary: California Climate Laws SB-253 and SB-261," accessed May 16, 2025, <https://www.workiva.com/resources/executive-summary-california-climate-laws-sb-253-and-sb-261>.

<sup>192</sup> California Air Resources Board, "Information Solicitation to Inform Implementation of California Climate-Disclosure Legislation: Senate Bills 253 and 261, as amended by SB 219," December 16, 2024, [https://ww2.arb.ca.gov/sites/default/files/2024-12/ClimateDisclosureQs\\_Dec2024.pdf](https://ww2.arb.ca.gov/sites/default/files/2024-12/ClimateDisclosureQs_Dec2024.pdf).

- Climate-related financial risks, encompassing both physical risks (e.g., extreme weather events) and transition risks (e.g., regulatory changes, market shifts).
- Measures adopted to reduce and adapt to these risks, detailing the strategies implemented to mitigate identified climate-related financial risks.

The reports must be made publicly available on the company's website.

**Timeline:**

- October 2023: SB 261 signed into law.
- January 1, 2026: Deadline for the first climate-related financial risk report.
- Biennially thereafter: Subsequent reports due every two years.

**Implications:**

As a multinational corporation with operations in California and annual revenues exceeding \$500 million, Dell is subject to SB 261's requirements. To comply, Dell must:

- **Conduct Internal Climate Risk Assessments:** Identify and evaluate both physical and transition climate-related financial risks specific to its operations and supply chain.
- **Develop Mitigation Strategies:** Formulate and implement measures to reduce and adapt to identified risks, integrating these strategies into corporate governance and risk management frameworks.
- **Prepare and Publish Biennial Reports:** Align disclosures with TCFD recommendations, ensuring transparency and accessibility by publishing reports on Dell's website.
- **Monitor Regulatory Developments:** Stay informed about any updates or guidance from the California Air Resources Board (CARB) regarding SB 261 implementation.

**Penalties:** Non-compliance with SB 261 can result in administrative penalties of up to \$50,000 per reporting year. Penalties may be imposed for failing to publish the required report or for providing inadequate or insufficient disclosures. The California Air Resources Board (CARB) is authorized to enforce these provisions. Additionally, the California Attorney General may pursue legal action against non-compliant entities.

**Evaluation:**

- **Status:** *Partially Effective*
  - While SB 261 is legally in effect, the first reporting deadline is January 1, 2026. As such, the law's provisions are not yet fully operational for covered entities like Dell.
- **Severity:** *Low*
  - The maximum financial penalty for non-compliance is \$50,000 per reporting year. There are no requirements for third-party assurance, and initial enforcement is expected to focus on compliance encouragement rather than punitive measures.
- **Enforcement Volatility:** *Low*
  - CARB has provided clear guidelines and timelines for compliance. While legal challenges exist, the enforcement landscape remains stable with no significant changes anticipated in the near term.

- **Stage Classification:** *Post-Assembly*
  - SB 261 primarily impacts downstream operations, focusing on the financial risks associated with climate change that could affect Dell's financial performance and investor relations.



## Appendix D. China

### 1. Tariffs

#### i) Current Regulations

##### **Adjustment of Tariff Rate to 125% on U.S.-Origin Goods**<sup>193</sup>

Following the U.S. government's further tariff escalation on April 10, 2025, raising the rate to 125%, China responded by raising its tariffs accordingly.

##### **Scope:**

- All products imported from the United States.

##### **Timeline:**

- April 11, 2025: The announcement was made.
- April 12, 2025: The notice became effective.

##### **Implications:**

- A 125% tariff effectively eliminates the commercial viability of importing U.S.-origin goods into China. Dell must urgently pivot supply chains to non-U.S. sources for goods sold or assembled in China.

##### **Penalties:**

- 125% additional tariff on all U.S.-origin imports.
- China announced it would not respond further to additional U.S. tariff increases under the current conditions.

##### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - Essentially a prohibitive tariff that eliminates commercial viability of importing any U.S. products. Paying over the full value again as duty would halt use of U.S. parts entirely, or force massive price increases.
- **Enforcement Volatility:** *High*
  - Reached unprecedented levels in an immediate response to U.S. actions. While authorities signaled a pause at this rate, the episode shows tariff enforcement can reach extreme levels with very little predictability in a geopolitical standoff.
- **Stage Classification:** *Pre- and Post-Final Assembly*

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<sup>193</sup> State Council Tariff Commission, 国务院关税税则委员会关于调整对原产于美国的进口商品加征关税措施的公告 [Announcement by the State Council Tariff Commission on Adjusting Additional Tariffs on Imported Goods Originating from the United States], April 11, 2025, [https://gss.mof.gov.cn/gzdt/zhengcefabu/202504/t20250411\\_3961823.htm](https://gss.mof.gov.cn/gzdt/zhengcefabu/202504/t20250411_3961823.htm).

- This cost shock applies at the component import stage and product export stage.

### **Adjustment of Tariff Rate to 84% on U.S.-Origin Goods**<sup>194</sup>

After the U.S. raised its "reciprocal tariff" rate from 34% to 84% on April 8, 2025, China adjusted its previously announced tariffs to match the escalation.

#### **Scope:**

- All products imported from the United States.

#### **Timeline:**

- April 9, 2025: The announcement was made.
- April 10, 2025 at 12:01 PM (CST): The notice became effective.

#### **Implications:**

- Massive escalation of import costs, making many U.S.-origin products commercially unfeasible for operations in China. Pressures Dell to urgently reassess supplier relationships and localization strategies.

#### **Penalties:**

- 84% additional tariff on all U.S.-origin goods.
- Other compliance provisions from Announcement No. 4 remain applicable.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - An even more punitive 84% import tariff, rendering most U.S. goods nearly cost-prohibitive. This level of tariff is financially devastating for any remaining U.S. components, essentially a near-block on such imports.
- **Enforcement Volatility:** *High*
  - Equally volatile; it was implemented within days as the trade conflict escalated. Such measures are reactive and unpredictable.
- **Stage Classification:** *Pre-and Post-Final Assembly*
  - This tariff measure impacts both the inbound supply of components (before assembly) and the import of finished goods for sale/distribution (after assembly) in China.

### **Tariff Increase on All U.S.-Origin Goods**<sup>195</sup>

<sup>194</sup> State Council Tariff Commission, 国务院关税税则委员会关于调整对原产于美国的进口商品加征关税措施的公告 [Announcement by the State Council Tariff Commission on Adjusting Additional Tariff Measures on Imported Goods Originating from the United States], April 9, 2025, [https://gss.mof.gov.cn/gzdt/zhengcefabu/202504/t20250409\\_3961684.htm](https://gss.mof.gov.cn/gzdt/zhengcefabu/202504/t20250409_3961684.htm).

<sup>195</sup> State Council Tariff Commission, 国务院关税税则委员会关于对原产于美国的进口商品加征关税的公告 [Announcement by the State Council Tariff Commission on Imposing Additional Tariffs on Imported

On April 2, 2025, the U.S. government announced a 34% "reciprocal tariff" on Chinese goods. China retaliated by imposing a 34% tariff on all goods originating from the United States.

**Scope:**

- All products imported from the United States.

**Timeline:**

- April 4, 2025: The announcement was made.
- April 10, 2025 at 12:01 PM (CST): The notice became effective.

**Implications:**

- Significant across-the-board cost increases on U.S.-origin imports, including IT equipment, electronic components, and machinery critical to Dell's supply chain and product assembly operations in China.

**Penalties:**

- 34% additional tariff on all U.S.-origin goods.
- Goods shipped before April 10, 2025, at 12:01 PM, and arriving by May 13, 2025, are exempt.

**Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - A flat 34% tariff on all U.S.-origin goods directly impacts Dell's core supply chain — including critical imports like chips, servers, and advanced machinery. The tariff would lead to significant cost inflation or forced sourcing adjustments.
- **Enforcement Volatility:** *High*
  - The tariff was enacted within 8 days of the U.S. announcement and implemented with minimal lead time. Its sweeping scope and geopolitical motivation mean future changes can occur rapidly. Although enforcement at customs is consistent, the policy direction is volatile and reactive, increasing uncertainty.
- **Stage Classification:** *Pre- and Post-Final Assembly*
  - This tariff measure impacts both the inbound supply of components (before assembly) and the import of finished goods for sale/distribution (after assembly) in China. Dell faces cost pressure throughout the entire value chain.

## **2. National Security**

### **i) Current Regulations**

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Goods Originating from the United States], April 4, 2025,  
[https://gss.mof.gov.cn/gzdt/zhengcefabu/202504/t20250404\\_3961451.htm](https://gss.mof.gov.cn/gzdt/zhengcefabu/202504/t20250404_3961451.htm).

### **Unreliable Entity List Announcement**<sup>196,197</sup>

This announcement updates the existing Unreliable Entity List (UEL), originally established by China's Ministry of Commerce to target foreign entities that endanger China's sovereignty, security, or development interests. The new update adds 11 U.S. companies to the list, reflecting heightened trade and national security tensions between China and the United States. Entities on the UEL are subject to restrictions on trade and investment activities involving China.

#### **Scope:**

- The 11 newly listed U.S. companies, including Skydio, BRINC Drones, Red Six Solutions, Synexxus, Firestorm Labs, Kratos Unmanned Aerial Systems, HavocAI, Neros Technologies, Domo Tactical Communications, Rapid Flight, and Insitu Inc.
- Entities within China and Chinese nationals interacting with these listed companies.

#### **Timeline:**

- September 19, 2020: China officially established the Unreliable Entity List mechanism.
- April 4, 2025: Announcement of the inclusion of Skydio and 10 other U.S. companies into the Unreliable Entity List via Announcement [2025] No. 7.
- April 4, 2025: The new restrictions take immediate effect.

#### **Implications:**

- Enterprises must avoid any direct trade activities (import/export) with the listed companies involving China.
- Enterprises must ensure no investment, partnership expansion, or procurement related to these entities inside China.
- Enterprises' third-party suppliers must be vetted to prevent indirect risks of non-compliance if they are tied to the listed companies.
- Internal compliance and supply chain teams must update screening procedures against the expanded UEL.

#### **Penalties:**

- Non-compliance with the UEL restrictions can lead to administrative penalties, including fines, suspension of business operations in China, or blacklisting of Dell's China-related operations.
- Further reputational risks in China if found collaborating with listed entities.

#### **Evaluation:**

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<sup>196</sup> Ministry of Commerce of the People's Republic of China, 不可靠实体清单工作机制关于将斯凯迪奥公司等11家美国企业列入不可靠实体清单的公告 [Announcement by the Unreliable Entity List Working Mechanism on Including Skydio Inc. and 10 Other U.S. Companies in the Unreliable Entity List], April 4, 2025,

[https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art\\_e4f474d3aeba4672913db1042d845d78.html](https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art_e4f474d3aeba4672913db1042d845d78.html).

<sup>197</sup> Embassy of the People's Republic of China in the United States, *China Adds Six US Firms to Its Unreliable Entity List, Effective from April 11, 2025*, April 9, 2025, [http://us.china-embassy.gov.cn/eng/zmgx/zxxx/202504/t20250409\\_11590915.htm](http://us.china-embassy.gov.cn/eng/zmgx/zxxx/202504/t20250409_11590915.htm).

- **Status:** *Effective*
- **Severity:** *High*
  - Non-compliance may result in business suspension, fines, or blacklisting in China, with reputational risk and potential operational exclusion.
- **Enforcement Volatility:** *High*
  - The UEL is politically driven and updated without notice; enforcement scope may extend to indirect associations (e.g., third-party vendors).
- **Stage Classification:** *Pre- and Post-Final Assembly*
  - Applies both to supply chain vetting and sales, procurement, or partnerships involving listed entities.

### **Regulations on the Implementation of the Anti-Foreign Sanctions Law<sup>198,199</sup>**

The Anti-Foreign Sanctions Law was enacted to safeguard China's sovereignty, security, and development interests, and to protect the legitimate rights and interests of Chinese citizens and organizations. In response to foreign countries implementing discriminatory restrictive measures against China, the State Council promulgated the Regulations on the Implementation of the Anti-Foreign Sanctions Law to detail the procedures and responsibilities for enforcing countermeasures.

#### **Scope:**

- Foreign entities and individuals imposing discriminatory measures against China or harming its sovereignty, security, or development interests.
- Chinese organizations and individuals prohibited from assisting in executing such foreign measures.

#### **Timeline:**

- March 21, 2025: Regulation adopted at the 55th Executive Meeting of the State Council.
- March 23, 2025: Regulation officially promulgated and came into immediate effect.

#### **Implications:**

- Must not execute or assist in implementing foreign discriminatory restrictive measures.
- Must refuse compliance with foreign sanctions if contacted or pressured by foreign authorities.
- Must establish internal procedures to screen activities and transactions for risks of assisting foreign sanctions.

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<sup>198</sup> State Council of the People's Republic of China, 实施《中华人民共和国反外国制裁法》的规定 [Provisions on the Implementation of the Law of the People's Republic of China on Countering Foreign Sanctions], March 24, 2025, [http://www.gov.cn/zhengce/zhengceku/202503/content\\_7015404.htm](http://www.gov.cn/zhengce/zhengceku/202503/content_7015404.htm).

<sup>199</sup> Aaron Wininger, "Regulations on the Implementation of the Anti-Foreign Sanctions Law of the People's Republic of China – Foreign-Owned Intellectual Property Can Be Seized," *China IP Law Update*, March 24, 2025, <https://www.chinaiplawupdate.com/2025/03/regulations-on-the-implementation-of-the-anti-foreign-sanctions-law-of-the-peoples-republic-of-china-foreign-intellectual-property-can-be-seized/>.

- Must ensure transactions and cooperation are not restricted based on foreign discriminatory measures.
- Must maintain compliance records.
- Must apply for approval if exceptional interaction with sanctioned entities is necessary.
- May seek legal relief through Chinese courts if harmed by foreign sanctions.

#### **Penalties:**

- Denial of visa issuance, entry bans, visa cancellation, and deportation of sanctioned foreign individuals.
- Sealing, seizure, or freezing of property within China, including cash, securities, shares, IP rights, and receivables.
- Prohibition or restriction on transactions, cooperation, and activities in fields such as education, science, trade, legal services, environment, culture, health, and sports.
- Ban or restriction on imports, exports, investments, provision of data or personal information, and issuance of work permits and residence qualifications.
- Fines may be imposed, although no specific amounts are defined.
- Correction orders for Chinese entities assisting foreign discriminatory measures.
- Restrictions or bans on government procurement, public tendering, import/export activities, and international service trade for noncompliance.
- Restrictions on outbound data and cross-border personal information transmission.
- Restrictions on departure from China or on stay/residence within China for violators.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - Empowers China to retaliate against those adhering to foreign sanctions. A company that obeys foreign sanctions at the expense of Chinese law could see its local assets frozen or operations blocked by such measures.
- **Enforcement Volatility:** *High*
  - Enforcement is politically motivated and case-specific. While not every company is targeted, if Dell were deemed to assist foreign sanctions, Chinese authorities could act swiftly and severely. The use of this law is new, and its enforcement tends to be unpredictable, depending on high-level diplomatic frictions.
- **Stage Classification:** *Post-Final Assembly*
  - Relevant when Dell is conducting business or making decisions after products are built, particularly in sales and support.

#### **Export Controls on Certain Dual-Use Items to the United States<sup>200</sup>**

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<sup>200</sup> Ministry of Commerce of the People's Republic of China, 商务部公告2024年第46号 关于加强相关两用物项对美国出口管制的公告 [MOFCOM Announcement No. 46 of 2024 on Strengthening Export Controls of Certain Dual-Use Items to the United States], December 3, 2024, [https://www.mofcom.gov.cn/zwgk/zcfb/art/2024/art\\_3d5e990b43424e60828030f58a547b60.html](https://www.mofcom.gov.cn/zwgk/zcfb/art/2024/art_3d5e990b43424e60828030f58a547b60.html).

In response to evolving national security concerns and increasing U.S. restrictions on Chinese entities, the Ministry of Commerce (MOFCOM) issued this regulation to enhance export control measures specifically targeting exports of sensitive dual-use items to the United States. The move is part of China's broader strategy to protect strategic industries, fulfill non-proliferation obligations, and assert regulatory reciprocity amid escalating technology and supply chain tensions.

This announcement supplements the foundational "Regulation on Export Control of Dual-Use Items" by imposing targeted restrictions on specific goods and technologies deemed critical for military or strategic use by U.S. entities.

**Scope:**

- Chinese exporters (individuals, enterprises, and organizations) involved in the trade of controlled dual-use items.
- Freight forwarders, customs brokers, logistics providers facilitating exports to the U.S.
- Foreign intermediaries re-exporting Chinese-origin dual-use items to the U.S.
- Specifically:
  - Export of gallium, germanium, antimony, and superhard materials to the United States is, in principle, prohibited.
  - Export of graphite materials to the United States is subject to stricter end-user and end-use review procedures before authorization.

**Timeline:**

- December 3, 2024: MOFCOM Announcement issued and entered into immediate effect.

**Implications:**

- No export of gallium, germanium, antimony, or superhard materials to U.S. entities without exception.
- Export of graphite materials requires detailed disclosures and case-by-case examination of end-users and end-uses.
- Enterprises must intensify supplier screening for Chinese-origin raw materials and subcomponents involving the restricted items.
- Enterprises should review logistics and distribution chains to avoid indirect delivery to restricted end-users.

**Penalties:**

- Confiscation of illegally exported goods and any derived illegal income.
- Revocation or suspension of export licenses and permissions.
- Criminal liability for serious violations (for entities and individuals involved).
- Risk of blacklisting under China's Unreliable Entity List framework for major infractions.

**Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*

- Essentially bans certain exports to U.S.; violations carry severe outcomes (confiscation of goods, license revocations, criminal liability). This can effectively shut down a non-compliant exporter's operations.
- **Enforcement Volatility:** *High*
  - Highly sensitive and politically driven. Enforcement can be sudden and strict as it's a retaliatory measure; regulators will aggressively enforce bans on strategic materials, though adjustments may occur with geopolitical shifts.
- **Stage Classification:** *Pre-Final Assembly*
  - Controls the export stage of specific materials.

## ii) Emerging Regulations

### **Regulations on Handling Foreign-Related Intellectual Property Disputes**<sup>201,202</sup>

The regulation was introduced to improve China's management of foreign-related intellectual property (IP) disputes, safeguard national security and public interests, protect Chinese enterprises' legitimate rights in cross-border IP cases, and promote fair international IP practices.

#### **Scope:**

- Chinese enterprises and individuals engaged in foreign-related IP activities, including foreign-invested enterprises registered in China.
- Government departments responsible for guiding and managing foreign-related IP disputes.

#### **Timeline:**

- February 23, 2025: Regulation adopted at the 42nd Executive Meeting of the State Council.
- March 7, 2025: Regulation officially promulgated (State Council Decree No. 801).
- July 1, 2025: Regulation comes into effect.

#### **Implications:**

- Must establish and improve internal compliance mechanisms for handling foreign-related IP disputes.
- Encouraged to prioritize mediation, arbitration, and other alternative dispute resolution (ADR) methods.

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<sup>201</sup> State Council of the People's Republic of China, 国务院关于涉外知识产权纠纷处理的规定 [Provisions of the State Council on the Handling of Foreign-Related Intellectual Property Disputes], March 19, 2025, [http://www.gov.cn/zhengce/content/202503/content\\_7014486.htm](http://www.gov.cn/zhengce/content/202503/content_7014486.htm).

<sup>202</sup> Xinhua, "China Issues Regulations on Resolving Foreign-Related IP Disputes," *english.gov.cn*, March 20, 2025, [https://english.www.gov.cn/policies/latestreleases/202503/20/content\\_WS67dbcc2ec6d0868f4e8f0ff0.html](https://english.www.gov.cn/policies/latestreleases/202503/20/content_WS67dbcc2ec6d0868f4e8f0ff0.html).



- Must comply with Chinese laws on confidentiality, state secrets, personal information protection, and technology export control when collecting or submitting evidence for overseas proceedings.
- Must report and coordinate with relevant Chinese authorities in foreign-related IP disputes involving significant national interests.
- Must ensure full compliance with China's data security, state secrets, and export control regulations in foreign-related IP activities.

#### **Penalties:**

- Correction orders may be issued for violations, such as unauthorized cross-border evidence transfer or breaches of confidentiality.
- Administrative penalties may be imposed under applicable Chinese laws.
- Civil, administrative, or criminal liability may arise for serious violations.

#### **Evaluation:**

- **Status:** *Passed*
- **Severity:** *Medium*
  - Violations involving evidence transfer or national interests may trigger administrative or criminal penalties, though financial fines are not the main risk.
- **Enforcement Volatility:** *High*
  - Highly context-dependent—enforcement may intensify in politically sensitive or high-profile IP cases involving foreign entities.
- **Stage Classification:** *Post-Final Assembly*
  - Applies to legal and IP enforcement activities, particularly during dispute resolution or litigation after operations are underway.

### **3. Supply Chain Controls**

#### **i) Current Regulations**

##### **Export Control List Update<sup>203</sup>**

In accordance with the Export Control Law of the People's Republic of China and the Regulations on the Administration of the Export of Dual-Use Items, and for the purposes of safeguarding national security and interests as well as fulfilling non-proliferation international obligations, the Ministry of Commerce (MOFCOM) has announced the inclusion of 12 U.S. entities into China's Export Control List. This marks an expansion of China's export control regime in response to perceived national security concerns.

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<sup>203</sup> Ministry of Commerce of the People's Republic of China, 商务部公告2025年第22号 公布将12家美国实体列入出口管制管控名单 [MOFCOM Announcement No. 22 of 2025 on Including 12 U.S. Entities in the Export Control List], April 9, 2025, [https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art\\_c6b190344a154e6f831e0fdcf190e41e.html](https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art_c6b190344a154e6f831e0fdcf190e41e.html).

**Scope:**

- Entities and individuals engaged in exports of dual-use items from China to the following 12 U.S. companies:
  - American Photonics
  - Novotech, Inc.
  - Echodyne
  - Marvin Engineering Company, Inc.
  - Exovera
  - Teledyne Brown Engineering, Inc.
  - BRINC Drones, Inc.
  - SYNEXXUS, Inc.
  - Firestorm Labs, Inc.
  - Kratos Unmanned Aerial Systems, Inc.
  - Domo Tactical Communications
  - Insitu, Inc.

**Timeline:**

- April 9, 2025: Announcement date.
- April 10, 2025, 12:01 PM (China Standard Time, CST): Regulation effective.

**Implications:**

- Exporters must immediately cease any ongoing or prospective export activities involving the 12 listed U.S. entities.
- Exports of dual-use items to these entities are strictly prohibited unless special permission is granted by the Ministry of Commerce.
- Exporters must apply to MOFCOM for a license if an export to any of the listed entities is considered necessary under exceptional circumstances.
- Exporters are expected to enhance their internal compliance systems and conduct thorough due diligence checks against the updated export control list.

**Penalties:**

- Unauthorized exports to listed entities may result in administrative penalties, revocation of export licenses, reputational damage, and potential criminal liability under Chinese law.

**Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - Violations can lead to revocation of export licenses, significant administrative penalties, and reputational damage for engaging with high-risk U.S. entities.
- **Enforcement Volatility:** *Medium*
  - Enforcement is formalized and list-based, but MOFCOM retains discretion in approvals and exceptions; sudden expansions are possible.

- **Stage Classification:** *Pre-Final Assembly*
  - Applies to export controls on raw materials or components before they are integrated into Dell's production or supply chain.

### **Export Controls on Tungsten, Tellurium, Bismuth, Molybdenum, and Indium-Related Items<sup>204</sup>**

This regulation was issued to strengthen national security, fulfill non-proliferation obligations, and safeguard critical supply chains. It introduces new export licensing requirements for key materials including tungsten, tellurium, bismuth, molybdenum, and indium, including specific compounds and related technical information.

#### **Scope:**

- Entities engaged in the production, processing, trade, or export of controlled tungsten, tellurium, bismuth, molybdenum, and indium materials or related technologies.

#### **Timeline:**

- February 4, 2025: Regulation officially announced and enters into immediate effect.
- Simultaneous update to China's "Dual-Use Items Export Control List."

#### **Implications:**

- Exporters must obtain specific export licenses from the Ministry of Commerce before exporting covered items.
- Detailed documentation must be provided, including information on end users, end uses, and re-export conditions.
- Companies must verify customer backgrounds and screen against restricted parties lists.
- High compliance risks for supply chains involving sensitive electronic, aerospace, energy, or defense applications.

#### **Penalties:**

- Export without authorization: confiscation of goods, revocation of export licenses, substantial fines.
- Severe violations may trigger criminal liability under China's Export Control Law.
- Exporters and responsible individuals may face administrative, civil, and criminal penalties depending on severity.
- Entities found aiding in illegal exports may also be blacklisted from trade activities.

#### **Evaluation:**

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<sup>204</sup> Ministry of Commerce and General Administration of Customs of the People's Republic of China, 商务部 海关总署公告2025年第10号 公布对钨、碲、铋、钼、铟相关物项实施出口管制的决定 [MOFCOM & GACC Announcement No. 10 of 2025 on Implementing Export Controls on Certain Tungsten, Tellurium, Bismuth, Molybdenum, and Indium-Related Items], February 4, 2025, [https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art\\_e623090907fc4e1092foa4db72f57b95.html](https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art_e623090907fc4e1092foa4db72f57b95.html).

- **Status:** *Effective*
- **Severity:** *High*
  - The penalties include confiscation of goods, revocation of export licenses, and criminal liability under the Export Control Law. Supply disruptions could directly impact Dell's ability to produce or ship advanced computing products.
- **Enforcement Volatility:** *Medium*
  - While the regulation itself is clearly codified, enforcement intensity may vary depending on geopolitical developments and the identities of the end users or partner countries. Export approvals are license-based, subject to end-user/end-use screening, and can be denied without detailed explanation. However, once issued, compliance expectations are well-defined.
- **Stage Classification:** *Pre-Final Assembly*
  - This regulation affects the availability of upstream raw materials and components. It constrains the sourcing and export of metallurgical inputs that may be critical to Dell.

### **Regulation on Export Control of Dual-Use Items**<sup>205,206</sup>

This regulation was issued to strengthen China's control over the export of dual-use items — goods, technologies, and services that have both civilian and military applications. It aims to safeguard national security and public interests, fulfill international non-proliferation obligations, and standardize export behavior for dual-use items.

#### **Scope:**

- Exporters of dual-use items (individuals, enterprises, and organizations within China).
- Freight forwarding agents, logistics service providers, and e-commerce platforms facilitating export transactions.
- Foreign entities or individuals that illegally obtain dual-use items from China.

#### **Timeline:**

- September 18, 2024: Adopted at the 41st Executive Meeting of the State Council.
- September 30, 2024: Officially promulgated as State Council Decree No. 792.
- December 1, 2024: Regulation comes into effect.

#### **Implications:**

- Export licenses must be obtained before exporting controlled dual-use items, technologies, or services.

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<sup>205</sup> State Council of the People's Republic of China, 中华人民共和国两用物项出口管制条例 [Regulation of the People's Republic of China on the Export Control of Dual-Use Items], September 30, 2024, [http://www.gov.cn/gongbao/2024/issue\\_11686/202411/content\\_6985161.html](http://www.gov.cn/gongbao/2024/issue_11686/202411/content_6985161.html).

<sup>206</sup> Eversheds Sutherland, "Effective 1 December 2024: PRC's New Regulation on the Export Control of Dual-Use Items and Unified Dual-Use Items List," *Eversheds Sutherland*, December 4, 2024, <https://www.eversheds-sutherland.com/en/slovakia/insights/effective-1-december-2024-pr-cs-new-regulation-on-the-export-control-of-dual-use-items>.

- Internal compliance systems must be established to control exports and verify end-users and end-uses.
- Transactions must be screened against control lists and restricted parties published by Chinese authorities.
- Violations of export control obligations must be reported to authorities as required.

#### **Penalties:**

- Confiscation of illegal income and goods.
- Fines up to five times the value of the illegal transaction or up to ¥5 million (~\$684,931<sup>207</sup>) if no illegal income exists.
- Revocation or suspension of export licenses and prohibition from engaging in export activities.
- Possible criminal liability for serious violations under Chinese Criminal Law.
- Inclusion on the Unreliable Entity List for serious breaches.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - Strict penalties for unauthorized exports of controlled items: through fines only meet the medium severity threshold, there may be export licenses revocation, and potential criminal prosecution and blacklist possibilities.
- **Enforcement Volatility:** *Medium*
  - Export control enforcement is tightening but still developing. Authorities are establishing compliance systems; while rules are clear, enforcement may intensify unpredictably with geopolitical climate or specific cases.
- **Stage Classification:** *Pre- and Post-Final Assembly*
  - Governs the export of critical materials, components, products, and technologies from China.

#### **Regulations on Rare Earth Administration**<sup>208,209</sup>

This regulation was issued to protect and rationally utilize rare earth resources, promote the high-quality development of the rare earth industry, safeguard ecological and resource security, and regulate the development, production, circulation, and export of rare earth products.

#### **Scope:**

- Enterprises and individuals engaged in rare earth mining, smelting and separation, metal refining, recycling, product circulation, and import/export activities within China.

<sup>207</sup> The conversion rate ¥1 = \$0.137 was retrieved from Morningstar on April 17, 2025, at 7:19 PM UTC.

<sup>208</sup> State Council of the People's Republic of China, 稀土管理条例 [Rare Earth Management Regulation], June 29, 2024, [http://www.gov.cn/zhengce/content/202406/content\\_6960152.htm](http://www.gov.cn/zhengce/content/202406/content_6960152.htm).

<sup>209</sup> Xinhua, "China Issues Regulations on Rare Earth Administration," *english.gov.cn*, June 29, 2024, [https://english.www.gov.cn/policies/latestreleases/202406/29/content\\_WS66800cfcc6d0868f4e8e8b15.html](https://english.www.gov.cn/policies/latestreleases/202406/29/content_WS66800cfcc6d0868f4e8e8b15.html).

- Regulatory bodies responsible for rare earth industry planning, management, environmental protection, and trade control.

#### **Timeline:**

- April 26, 2024: Adopted at the 31st Executive Meeting of the State Council.
- June 22, 2024: Officially promulgated (State Council Decree No. 785).
- October 1, 2024: Regulation comes into effect.

#### **Implications:**

- Only enterprises designated by authorities may engage in rare earth mining and smelting separation activities.
- Enterprises must obtain mining rights and follow national plans and total quantity control for rare earth production.
- Rare earth products must be traced through a government-established tracking system, and enterprises must accurately record and submit flow information.
- Environmental protection, resource conservation, safety production, and clean manufacturing standards must be strictly followed.
- Illegal rare earth mining, smelting, or sales activities are prohibited; enterprises must not process or trade illegal rare earth products.
- Rare earth exports must comply with applicable foreign trade, export control, and customs regulations.

#### **Penalties:**

- Confiscation of illegal rare earth products and unlawful income.
- Fines up to ten times the value of the illegally mined, processed, or sold rare earth products.
- For violations where no transaction value can be determined, fines range from ¥500,000 (~\$68,493)<sup>210</sup> to ¥5 million (~\$684,931)<sup>211</sup>.
- Suspension or revocation of mining rights, smelting/separation permits, export licenses, or business licenses for serious violations.
- Inclusion on industry blacklists for illegal mining, smelting, separation, or unauthorized export activities.
- Criminal liability if the violation constitutes a crime under Chinese law.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - Violations incur severe penalties: confiscation of illegal product, fines up to 10 times the value, and possible license revocation or criminal charges.
- **Enforcement Volatility:** *Medium*

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<sup>210</sup> The conversion rate ¥1 = \$0.137 was retrieved from Morningstar on April 17, 2025, at 7:19 PM UTC.

<sup>211</sup> Ibid.

- Rare earth rules are strictly written, but enforcement has seen periodic crackdowns. Compliance is monitored, yet timing and focus of enforcement actions can vary with policy priorities.
- **Stage Classification:** *Pre-Final Assembly*
  - Regulates upstream raw material extraction and supply. Impacts Dell's component supply chain (availability of rare earth materials for manufacturing).

### **Export Controls on Certain Medium and Heavy Rare Earth Items**<sup>212</sup>

This regulation introduces new export controls over key medium and heavy rare earth elements (including Samarium, Gadolinium, Terbium, Dysprosium, Lutetium, Scandium, and Yttrium and their derivatives) to safeguard national security, fulfill non-proliferation obligations, and protect strategic resources. It follows China's broader trend of tightening controls over critical raw materials amid evolving geopolitical and supply chain considerations.

#### **Scope:**

- Exporters of specified medium and heavy rare earth elements and their alloys, compounds, and oxide materials.
- Companies engaged in international trade, particularly in the rare earths, aerospace, defense, electronics, and high-tech manufacturing sectors.
- Customs authorities, exporters, freight forwarders, and related logistics providers handling controlled items.

#### **Timeline:**

- April 4, 2025: Regulation issued and becomes immediately effective.
- Simultaneous update to China's "Dual-Use Items Export Control List."

#### **Implications:**

- Exporters must apply for an export license with the Ministry of Commerce before exporting any of the listed rare earth-related items.
- Items must be properly identified at the time of customs declaration, including a clear notation on whether the goods are subject to export controls and providing the appropriate dual-use item control code.
- Customs will scrutinize declarations more rigorously; cargo will be detained if control declarations are disputed.
- Companies must strengthen internal compliance programs for export control classification and licensing.

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<sup>212</sup> Ministry of Commerce and General Administration of Customs of the People's Republic of China, 商务部 海关总署公告2025年第18号 公布对部分中重稀土相关物项实施出口管制的决定 [Announcement No. 18 of 2025 by the Ministry of Commerce and the General Administration of Customs on Implementing Export Controls on Certain Medium and Heavy Rare Earth-Related Items], April 4, 2025, [https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art\\_9c2108ccaf754f22a34abab2fedaa944.html](https://www.mofcom.gov.cn/zwgk/zcfb/art/2025/art_9c2108ccaf754f22a34abab2fedaa944.html).

- Exporting without a license could lead to major operational disruption, including shipment seizures and legal penalties.
- Companies must evaluate their supply chains for potential dependencies on these materials, review supplier compliance, and anticipate possible sourcing challenges or delays.

#### **Penalties:**

- Unauthorized export of controlled rare earth items can result in administrative penalties such as:
  - Confiscation of illegal gains and goods.
  - Fines.
  - Revocation of export privileges.
- Serious violations could escalate to criminal liability under the Export Control Law, including imprisonment.
- Suspension or cancellation of customs clearance qualifications for repeat or intentional violations.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - This regulation imposes strict licensing requirements and criminal liability for unauthorized exports of critical rare earth materials. The listed materials are essential for magnets, advanced electronics, and high-efficiency computing components—making them critical to Dell’s upstream supplier base. Penalties include confiscation, fines, and potential imprisonment for severe breaches, meeting high-severity thresholds under Dell’s risk framework.
- **Enforcement Volatility:** *High*
  - Although the regulation is formally codified, license issuance is discretionary and highly geopolitically sensitive. Customs inspections are increasingly rigorous, and MOFCOM may deny export permits based on end-user, destination country, or strategic context without public explanation. Exporters face unpredictability even when fully compliant.
- **Stage Classification:** *Pre-Final Assembly*
  - These materials are upstream raw inputs or subcomponents used in advanced manufacturing.

#### **ii) Emerging Regulations**



### **Mineral Resources Law**<sup>213,214</sup>

The law aims to promote the rational development and utilization of mineral resources, strengthen ecological protection, safeguard national ownership rights and lawful mining rights, enhance mineral resource security, and support high-quality mining industry development in China. It emphasizes ecological protection, strategic resource security, green mining, and international cooperation.

#### **Scope:**

- Enterprises and individuals engaged in mineral resource exploration, mining, trade, and ecological restoration activities within China.
- Foreign-invested enterprises operating in China's mining sector.
- Government agencies regulating mineral resource activities.

#### **Timeline:**

- March 19, 1986: Original Mineral Resources Law passed.
- August 29, 1996: First amendment.
- August 27, 2009: Second amendment.
- November 8, 2024: Major revision adopted by the Standing Committee of the National People's Congress.
- July 1, 2025: Revised law comes into effect.

#### **Implications:**

- Mining rights (exploration and mining permits) must be obtained lawfully through bidding, auction, or listing; private mining without licenses is prohibited.
- Strategic mineral resources are subject to special protective development policies and cannot be casually exploited.
- Mining activities must comply with national environmental protection, safety production, and ecological restoration obligations.
- Exploration and mining projects must submit standardized plans, obtain approvals, and undergo periodic inspections.
- Mining companies must contribute to ecological restoration funds and implement approved rehabilitation projects.
- Companies must prevent pollution, optimize resource recovery rates, and ensure safe and sustainable operations.
- Mineral rights transactions (transfer, mortgage) must be registered; unregistered changes are invalid.
- Foreign organizations and individuals harming China's mineral resource security will be legally pursued.

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<sup>213</sup> State Council of the People's Republic of China, 中华人民共和国矿产资源法 [Mineral Resources Law of the People's Republic of China], November 9, 2024,

[http://www.gov.cn/yaowen/liebiao/202411/content\\_6985756.htm](http://www.gov.cn/yaowen/liebiao/202411/content_6985756.htm).

<sup>214</sup> "Mineral Resources Law," *NPC Observer*, accessed May 8, 2025, <https://npcobserver.com/legislation/mineral-resources-law/>.

- Entities must cooperate with government supervision and inspections; refusal or obstruction is punishable.

#### **Penalties:**

- Illegal exploration without a license: confiscation of illegal proceeds, tools, and fines of RMB 100,000–1 million.
- Illegal mining without a license: confiscation of tools and mined minerals, fines of 3–5 times the market value of mined minerals, or RMB 100,000–1 million if value is low.
- Unauthorized compression of strategic mineral resources: fines of RMB 100,000–1 million.
- Mining without required permits: fines up to RMB 50,000–500,000 plus possible shutdown.
- Failure to meet recovery/utilization standards: fines of RMB 100,000–500,000, with severe cases leading to license revocation.
- Failure to perform ecological restoration: fines of up to 5 times the required restoration costs.
- Disruption or obstruction of inspections: fines of RMB 20,000–100,000.
- Entities refusing emergency resource mobilization during national emergencies: fines up to RMB 50,000 for individuals and RMB 500,000 for organizations.
- Criminal responsibility for serious violations, including illegal mining, environmental damage, and endangerment of public safety.

#### **Evaluation:**

- **Status:** *Passed*
- **Severity:** *High*
  - Violations—especially illegal mining or failure to restore ecosystems—can result in license revocation, multi-million USD-equivalent fines, or criminal prosecution.
- **Enforcement Volatility:** *Medium*
  - Enforcement is systematic and tied to inspections, but escalates significantly for violations involving strategic minerals or environmental harm
- **Stage Classification:** *Pre-Final Assembly*
  - Impacts raw material sourcing and upstream supply chain compliance with Chinese mining regulations.

#### **Supply Chain Management Service Enterprises Classification and Assessment**<sup>215</sup>

This draft industry standard aims to establish a comprehensive classification and evaluation system for supply chain management service enterprises in China. It seeks to address the rapid development and transformation of the supply chain sector, promote standardization, enhance

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<sup>215</sup> Ministry of Commerce of the People's Republic of China, 公开征求《供应链管理服务企业分类与评估(征求意见稿)》行业标准意见 [Public Consultation on the Draft Industry Standard for Classification and Evaluation of Supply Chain Management Service Enterprises], April 3, 2025, [https://ltfzs.mofcom.gov.cn/gztz/art/2025/art\\_ece31db9cf9142f69c5b452d12b03839.html](https://ltfzs.mofcom.gov.cn/gztz/art/2025/art_ece31db9cf9142f69c5b452d12b03839.html).

service quality, guide enterprise specialization, digitalization, green transformation, and foster global competitiveness. The initiative builds upon earlier policies like the State Council's 2017 guidance on supply chain innovation and demonstration projects launched by the Ministry of Commerce.

**Scope:**

- Supply chain management service enterprises across agricultural, industrial, and consumer goods sectors in China.
- Entities providing integrated services like procurement, logistics, information management, financial services, and digital platforms.
- Third-party agencies conducting classification and evaluation services for these enterprises.

**Timeline:**

- 2018: Project included in Ministry of Commerce's 2018 flow industry standard revision plan.
- 2018–2025: Research, drafting, pilot assessments, and expert consultations conducted.
- March 2025: Submitted for public comment.

**Implications:**

- Enterprises must prepare for classification into agricultural, industrial, consumer goods, or comprehensive supply chain service types.
- Companies will be evaluated on management, logistics, information systems, financial solutions, and service performance.
- Assessment results (rated 5A/4A/3A/NR) will impact brand image, government policy support eligibility, and market competitiveness.
- Evaluated enterprises must maintain compliance with environmental, tax, customs, and other regulations.

**Penalties:**

- No direct penalties specified.
- Poor assessment results (e.g., NR rating) could damage brand reputation, reduce policy support opportunities, and impact market access.
- Enterprises must ensure materials submitted for evaluation are truthful; falsification could result in disqualification.

**Evaluation:**

- **Status:** *Draft*
- **Severity:** *Low*
  - No direct fines or legal penalties; outcomes affect reputation and policy support, not immediate finances.
- **Enforcement Volatility:** *Low*

- Implemented via an evaluation scheme with defined criteria, so outcomes are relatively predictable and administrative (not punitive).
- **Stage Classification:** Pre-Final Assembly
  - Focuses on operational management and compliance capabilities in procurement and production

### **Regulations on Ensuring Payment to Small and Medium-Sized Enterprises**<sup>216,217</sup>

This regulation was issued to address the persistent problem of delayed payments to small and medium-sized enterprises (SMEs) by government bodies, public institutions, and large enterprises. It aims to create a fairer business environment, improve payment practices, and protect the legitimate rights and interests of SMEs in China.

#### **Scope:**

These entities below must ensure timely payment when purchasing goods, undertaking projects, or acquiring services from SMEs located in China.

- Government agencies
- Public institutions
- Large enterprises
- These entities must ensure timely payment when purchasing goods, undertaking projects, or acquiring services from SMEs located in China.

#### **Timeline:**

- July 5, 2020: Original regulation issued (State Council Decree No. 728).
- October 18, 2024: Amendment approved at the 43rd Executive Meeting of the State Council.
- March 17, 2025: Amended regulation officially promulgated (State Council Decree No. 802).
- June 1, 2025: Amended regulation comes into effect.

#### **Implications:**

- Pay SMEs within the agreed contract period, generally not exceeding 60 days after delivery or service acceptance.
- Avoid unreasonable contract clauses, such as linking SME payment to the receipt of third-party payments.
- Establish internal systems for verifying goods or service acceptance and ensuring timely payment processing.
- Maintain accurate records of contracts, delivery/acceptance, and payment status.

<sup>216</sup> State Council of the People's Republic of China, 保障中小企业款项支付条例 [Regulation on Ensuring Timely Payment to Small and Medium-Sized Enterprises], March 24, 2025, [http://www.gov.cn/zhengce/content/202503/content\\_7015401.htm](http://www.gov.cn/zhengce/content/202503/content_7015401.htm).

<sup>217</sup> Xinhua, "China Unveils New Regulations to Guarantee Payments for SMEs," *english.gov.cn*, March 24, 2025, [https://english.www.gov.cn/policies/latestreleases/202503/24/content\\_WS67e14a43c6d0868f4e8f11d2.html](https://english.www.gov.cn/policies/latestreleases/202503/24/content_WS67e14a43c6d0868f4e8f11d2.html).

- Actively resolve disputes over goods, services, or payments without unjustified delay.
- Monitor SME payment practices, update compliance protocols, and check for government-issued blacklists.

#### **Penalties:**

- SMEs may request overdue interest based on the People's Bank of China Loan Prime Rate (LPR) plus penalty margin for late payments.
- Entities that seriously delay payments may be publicly blacklisted on the National SME Payment Monitoring Platform.
- Negative payment records may lead to lowered credit ratings and restricted access to government procurement, financing, and subsidies.
- Correction orders and administrative sanctions may be imposed under applicable laws.
- SMEs may bring breach of contract lawsuits to enforce payment obligations and claim damages under the Civil Code and Contract Law.

#### **Evaluation:**

- **Status:** *Passed*
- **Severity:** *Medium*
  - Key risks include blacklisting, restricted access to government contracts, and reputational damage—financial penalties are moderate.
- **Enforcement Volatility:** *Medium*
  - Enforcement depends on complaints or reporting; while formalized, monitoring may vary by region or agency.
- **Stage Classification:** *Post-Final Assembly*
  - Applies to post-delivery payment practices, especially in vendor or project-based transactions involving SMEs in China.

## **4. Operational Compliance**

### **i) Current Regulations**

#### **Regulation on Network Data Security Management<sup>218,219</sup>**

The regulation was issued to standardize network data processing activities, strengthen network data security, promote the lawful, reasonable, and effective use of network data, protect personal and organizational rights, and safeguard national security and public interests. It builds upon the Cybersecurity Law, Data Security Law, and Personal Information Protection Law.

#### **Scope:**

<sup>218</sup> State Council of the People's Republic of China, 网络安全安全管理条例 [Regulations on the Management of Network Data Security], September 24, 2024,

[http://www.gov.cn/zhengce/content/202409/content\\_6977766.htm](http://www.gov.cn/zhengce/content/202409/content_6977766.htm).

<sup>219</sup> "Regulation on Network Data Security Management," *Lawinfochina*, accessed May 8, 2025, <http://www.lawinfochina.com/display.aspx?id=43659&lib=law&EncodingName=big5>.

- All individuals, enterprises, and organizations conducting network data processing activities within China.
- Overseas entities processing Chinese citizens' personal information under conditions covered by the Personal Information Protection Law.
- Any overseas activities harming China's national security, public interests, or the legitimate rights of individuals and organizations.

#### **Timeline:**

- August 30, 2024: Adopted at the 40th Executive Meeting of the State Council.
- September 30, 2024: Officially promulgated (State Council Decree No. 790).
- January 1, 2025: Regulation comes into effect.

#### **Implications:**

- Establish and maintain a network data security management system based on cybersecurity classification requirements.
- Implement technical security measures, such as encryption, access controls, backups, and incident response planning.
- Promptly fix product or service vulnerabilities and report serious security risks to authorities within 24 hours if they endanger national security or public interests.
- Develop and activate emergency response plans in case of data security incidents, notify affected parties if rights are harmed, and report criminal activity to public security organs when necessary.
- Ensure contracts with third-party data processors specify purposes, methods, scope, and security obligations, and retain transaction records for at least three years.

#### **Penalties:**

- Correction orders for violations of network data security management obligations.
- Warnings, confiscation of illegal income, and fines, depending on the severity of violations.
- Suspension or shutdown of relevant business activities or websites for serious breaches.
- Revocation of business licenses for extremely serious violations.
- Legal liability including administrative, civil, or criminal responsibility under applicable laws.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - This regulation imposes a wide range of penalties, including business suspension, website shutdown, and revocation of business licenses for serious data security violations. Additionally, civil and criminal liability may apply under Chinese law.
- **Enforcement Volatility:** *Medium*
  - The legal structure is well-defined, and core enforcement is handled by the Cyberspace Administration of China. However, actual enforcement is selectively

intensified during political sensitivity. Dell must assume enforcement is consistent for baseline violations, but escalates unpredictably for high-risk contexts (e.g., government clients, large datasets involving Chinese citizens).

- **Stage Classification:** *Post-Final Assembly*
  - This regulation governs how Dell handles networked data post-deployment: in customer-facing platforms, IT infrastructure, or operational systems within China.

### **Regulations for the Implementation of the Enterprise Income Tax Law**<sup>220</sup>

The regulation refines and clarifies the implementation of the Enterprise Income Tax Law (EIT Law), supporting uniform taxation principles for domestic and foreign-invested enterprises. It aims to optimize tax administration, clarify taxable income sources, deductions, special adjustments (like transfer pricing), and preferential policies, to encourage high-quality development and improve China's investment environment

#### **Scope:**

- All resident enterprises and non-resident enterprises with income derived from China.
- Foreign-invested enterprises, small and micro enterprises, high-tech enterprises, and enterprises engaged in strategic sectors (agriculture, environmental protection, infrastructure, etc.).
- Entities involved in cross-border investments and transfer pricing arrangements.

#### **Timeline:**

- December 6, 2007: First promulgation by the State Council (Decree No. 512).
- April 23, 2019: First revision (Decree No. 714).
- December 6, 2024: Second revision adopted by the State Council (Decree No. 797).
- January 20, 2025: Latest version officially comes into effect.

#### **Implications:**

- Enterprises must accurately calculate taxable income based on accrual basis.
- Clarification of income sources (sales, services, interest, dividends, royalties, etc.) and deductions (reasonable costs, taxes, R&D expenses, staff benefits).
- Special tax rules apply for mergers, restructuring, asset transfers, and tax planning.
- Transfer pricing compliance strengthened: enterprises must maintain and submit contemporaneous documentation for related-party transactions.
- Introduction of rules on thin capitalization (debt vs equity financing standards).
- Resident enterprises must report global income; non-resident enterprises are taxed on Chinese-sourced income, with detailed withholding tax rules.
- Broader tax incentives are provided for high-tech enterprises, SMEs, environmental protection projects, and R&D activities.

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<sup>220</sup> State Council of the People's Republic of China. (2019, April 23). 中华人民共和国企业所得税法实施条例 [Regulation on the Implementation of the Enterprise Income Tax Law of the People's Republic of China]. [http://www.gov.cn/gongbao/content/2019/content\\_5468940.htm](http://www.gov.cn/gongbao/content/2019/content_5468940.htm)

- Enterprises may enjoy tax credits for eligible equipment investment and preferential tax rates for specific industries.
- Anti-avoidance measures are expanded: tax authorities can adjust for unreasonable tax arrangements or low-tax jurisdictions.
- Strict penalties for tax evasion, non-compliance with documentation, or obstruction of tax supervision.

#### **Penalties:**

- Failure to file or underreporting taxable income leads to back taxes, fines, and late payment interest.
- Transfer pricing non-compliance may trigger additional taxable income adjustments plus interest.
- Illegal tax avoidance via aggressive tax planning (e.g., sham arrangements) can result in penalties and supplementary taxes.
- Withholding agents who fail to withhold tax for non-residents may face penalties.
- Serious violations (e.g., false declarations, destruction of records) may lead to criminal liability.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - Significant penalties for non-compliance, including large back taxes, transfer pricing adjustments, and criminal liability. Relevant to Dell's cross-border structure.
- **Enforcement Volatility:** *Medium*
  - Rules are clear, but enforcement intensity varies by transaction type and audit priority.
- **Stage Classification:** *Post-Final Assembly*
  - Applies during financial reporting and tax filing—after revenue is recognized and operations are ongoing.

#### **Regulations on Implementation of Consumer Rights Protection Law**<sup>221,222</sup>

This regulation was issued to detail the enforcement of the Consumer Rights Protection Law, aiming to strengthen the protection of consumers' legitimate rights, promote fair business practices, improve market supervision, and build a safe, fair, and trustworthy consumption environment.

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<sup>221</sup> State Council of the People's Republic of China, 中华人民共和国消费者权益保护法实施条例 [Regulation on the Implementation of the Law of the People's Republic of China on the Protection of Consumer Rights and Interests], March 19, 2024, [http://www.gov.cn/zhengce/content/202403/content\\_6940158.htm](http://www.gov.cn/zhengce/content/202403/content_6940158.htm).

<sup>222</sup> Xinhua, "China Unveils Regulations on Implementation of Consumer Rights Protection Law," *english.gov.cn*, March 19, 2024, [https://english.www.gov.cn/policies/latestreleases/202403/19/content\\_WS65f974b2c6d0868f4e8e53d1.html](https://english.www.gov.cn/policies/latestreleases/202403/19/content_WS65f974b2c6d0868f4e8e53d1.html).



**Scope:**

- Business operators providing goods or services to consumers within China, including both physical and online channels.
- Regulatory authorities supervising consumer rights protection activities.

**Timeline:**

- February 23, 2024: Adopted at the 26th Executive Meeting of the State Council.
- March 15, 2024: Officially promulgated (State Council Decree No. 778).
- July 1, 2024: Regulation comes into effect.

**Implications:**

- Business operators must ensure goods and services meet safety standards and protect personal and property safety.
- Defective goods or services that pose risks must be recalled, and necessary costs incurred by consumers must be compensated.
- Accurate, complete, and easily understandable information about products and services must be provided to consumers.
- False advertising, deceptive marketing, data manipulation, and misleading pricing are prohibited.
- Significant terms such as automatic renewals must be clearly and prominently disclosed to consumers.
- Operators must respect consumers' right to freely choose goods and services without coercion or disguised coercion.
- Commitments made in advertisements, promotional materials, or notices must be fulfilled.
- Real identities (names, business licenses) must be clearly disclosed, including in online transactions.

**Penalties:**

- Orders to correct violations and official warnings.
- Confiscation of illegal income.
- Fines ranging from 1 to 5 times the amount of illegal income for general consumer protection violations; if no illegal income, fines up to ¥300,000 (\$41095)<sup>223</sup>.
- Fines ranging from 1 to 10 times the amount of illegal income for violations involving consumer personal credit information; if no illegal income, fines up to ¥500,000 (\$68493)<sup>224</sup>.
- Suspension of business operations for serious violations.
- Revocation of business licenses for extremely serious or repeated violations.
- Civil or criminal liability under applicable laws if violations cause serious harm.

**Evaluation:**

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<sup>223</sup> The conversion rate ¥1 = \$0.137 was retrieved from Morningstar on April 17, 2025, at 7:19 PM UTC.

<sup>224</sup> Ibid.

- **Status:** *Effective*
- **Severity:** *High*
  - Significant penalties for infringements: fines 1–10× illegal gains, business suspension, or even business license revocation for grave or repeated violations. Civil/criminal liability applies if consumers suffer serious harm.
- **Enforcement Volatility:** *Medium*
  - Enforcement intensity can spike during consumer protection campaigns (e.g. around Consumer Day) or high-profile cases. Generally enforced by market regulators, but oversight may be uneven across industries or regions.
- **Stage Classification:** *Post-Final Assembly*
  - Applies to products and services in the consumer market after manufacturing. It governs sales practices, product quality in use, and after-sales obligations.

### **Regulations for the Implementation of the Standardization Law**<sup>225</sup>

This regulation refines the implementation of the Standardization Law by clarifying responsibilities for national, industry, local, group, and enterprise standards; ensuring the effective application of mandatory standards; promoting international standard adoption; and enhancing supervision to safeguard public safety, environmental protection, and product quality.

#### **Scope:**

- Government departments responsible for standardization.
- Enterprises, social organizations, and individuals involved in drafting, implementing, publishing, or using standards.
- Certification and inspection bodies conducting conformity assessments based on standards.

#### **Timeline:**

- April 6, 1990: The original Regulations for the Implementation of the Standardization Law were promulgated by the State Council.
- March 10, 2024: The State Council issued the Decision on Amending and Repealing Certain Administrative Regulations, which included amendments to the 1990 Regulations.
- May 1, 2024: The amendments to the Regulations came into effect.

#### **Implications:**

- Mandatory national standards must be strictly followed in production, sales, and import activities involving safety, health, environmental protection, and public interests.
- Enterprises must develop internal standards if no applicable national, industry, or local standards exist and file them for record.

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<sup>225</sup> State Council of the People's Republic of China, 中华人民共和国标准化法实施条例 [Regulation on the Implementation of the Standardization Law of the People's Republic of China], March 10, 2024, [http://www.gov.cn/zhengce/content/202403/content\\_6939590.htm](http://www.gov.cn/zhengce/content/202403/content_6939590.htm).

- Standards used in production must be clearly marked on products, packaging, or accompanying documents.
- Products exported must meet agreed technical requirements; domestic sales must comply with Chinese mandatory standards.
- Certification and inspection activities must align with official standards and must be truthful and accurate.
- Entities must cooperate with government inspections and report violations of mandatory standards.
- Encourage adoption of international and advanced foreign standards where appropriate.

#### **Penalties:**

- Orders to correct for failure to develop or file standards, improper labeling, or non-compliance with standardization requirements.
- Cease production, confiscate, destroy, or take technical measures for non-compliant products; fine 20–50% of product value; up to ¥5,000 (\$684)<sup>226</sup> fine for responsible individuals.
- Cease sales, recall products, confiscate illegal income for non-compliant goods; fine 10–20% of product value; up to ¥5,000 (\$684)<sup>227</sup> fine for responsible individuals.
- Seal, confiscate, and fine 20–50% of value for imported non-compliant products; up to ¥5,000 (\$684)<sup>228</sup> fine for responsible individuals.
- Criminal liability if serious consequences arise from producing, selling, or importing non-compliant products.
- Right to administrative reconsideration or direct court litigation within 15 days after receiving a penalty notice.
- Obligation to compensate affected parties for damages caused by standard violations.
- Administrative or criminal liability for standardization regulatory staff falsifying data, abusing power, or accepting bribes.
- All fines and confiscated income must be turned over to the state treasury.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - Non-compliance with mandatory standards can halt operations. Authorities can order production or sales to cease, confiscate or destroy non-compliant products, and impose fines of 20–50% of product value. Serious breaches (e.g. major safety standard violations) can lead to criminal liability.
- **Enforcement Volatility:** *Medium*
  - Standard compliance is consistently overseen, but enforcement can intensify after incidents or in targeted industry sweeps.
- **Stage Classification:** *Pre-Final Assembly*

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<sup>226</sup> The conversion rate ¥1 = \$0.137 was retrieved from Morningstar on April 17, 2025, at 7:19 PM UTC.

<sup>227</sup> Ibid.

<sup>228</sup> Ibid.

- Pertains to product design and manufacturing processes.

## ii) Emerging Regulations

### **Value-Added Tax Law**<sup>229,230</sup>

The Value-Added Tax (VAT) Law is China's first comprehensive legislation to codify the VAT regime, replacing the previous Interim VAT Regulations that had been in place since 1994. Passed by the Standing Committee of the National People's Congress on December 25, 2024, the law aims to create a more standardized, transparent, and robust VAT system aligned with China's high-quality development goals. It provides greater clarity on taxable activities, rates, taxpayer classifications, invoicing, and VAT administration.

#### **Scope:**

- Enterprises and individuals engaged in sales of goods, services, intangible assets, and real estate within China.
- Importers of goods into China.
- Small-scale VAT taxpayers (annual taxable sales ≤ RMB 5 million).
- Foreign entities and individuals engaging in taxable transactions within China.
- Tax authorities and customs offices administering VAT collection.

#### **Timeline:**

- December 25, 2024: VAT Law passed by the Standing Committee of the National People's Congress.
- January 1, 2026: VAT Law comes into effect, replacing the existing Interim VAT Regulations.

#### **Implications:**

- Introduces three main VAT rates: 13%, 9%, and 6%, plus 0% for qualifying exports and cross-border services.
- Defines "small-scale taxpayers" and offers optional registration under general taxpayer status.
- Clarifies VAT treatment of deemed sales, mixed transactions, and export refunds.
- Establishes specific rules for calculating output tax and allowable input tax deductions.
- Codifies tax incentives (e.g., VAT exemptions for agricultural products, healthcare, education, etc.).
- Mandates electronic invoicing adoption and inter-agency information sharing.
- Provides for refund or carryforward mechanisms when input tax exceeds output tax.

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<sup>229</sup> National People's Congress Standing Committee, 中华人民共和国增值税法 [Value-Added Tax Law of the People's Republic of China], adopted December 25, 2024, effective January 1, 2026, <http://policy.mofcom.gov.cn/claw/clawContent.shtml?id=101341>.

<sup>230</sup> EY, "China Officially Enacts VAT Law, Ushering in a New Era of Tax Governance," January 6, 2025, <https://globaltaxnews.ey.com/news/2025-0133-china-officially-enacts-vat-law-ushering-in-a-new-era-of-tax-governance>.

- Tightens requirements for tax compliance, invoicing, and recordkeeping, raising standards for internal VAT accounting practices.
- Customs to continue administering VAT on imports with harmonized procedures.
- Affects both domestic and multinational companies operating in China, requiring system updates, staff retraining, and possible supply chain adjustments.

#### **Penalties:**

- Violations (e.g., underpayment, false invoicing) will be penalized under the Tax Collection and Administration Law and related laws.
- Specific administrative and criminal liabilities apply for evasion, fraud, and obstruction of tax administration.

#### **Evaluation:**

- **Status:** *Passed*
- **Severity:** *High*
  - Violations such as false invoicing or VAT evasion can trigger criminal charges, heavy back taxes, and severe administrative fines.
- **Enforcement Volatility:** *Low*
  - VAT enforcement is routine but strict, especially with digital invoicing and cross-agency data sharing under the new law.
- **Stage Classification:** *Post-Final Assembly*
  - Applies to sales, invoicing, tax filing, and import/export declarations—after production and distribution.

#### **2025 Stabilizing Foreign Investment Action Plan**<sup>231</sup>

In response to the growing need for high-level opening-up and to enhance foreign investor confidence, China's State Council has issued the "2025 Stabilizing Foreign Investment Action Plan," aiming to expand market access, optimize the business environment, and attract and retain foreign investment. The plan focuses on liberalization in sectors like telecommunications, healthcare, education, manufacturing, and services, while providing stronger service guarantees, better financing, and enhanced platform openness.

#### **Scope:**

- Foreign-invested enterprises operating or investing in China
- Government departments at national and subnational levels involved in foreign investment policy implementation
- Development zones, Free Trade Zones, and service pilot areas hosting foreign investment

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<sup>231</sup> General Office of the State Council of the People's Republic of China, 国务院办公厅关于转发商务部、国家发展改革委《2025年稳外资行动方案》的通知 [Notice of the General Office of the State Council on Forwarding the Ministry of Commerce and the National Development and Reform Commission's "2025 Action Plan for Stabilizing Foreign Investment"], February 19, 2025, [http://www.gov.cn/zhengce/content/202502/content\\_7004409.htm](http://www.gov.cn/zhengce/content/202502/content_7004409.htm).

- Cross-border M&A participants and multinational companies setting up investment entities in China

#### **Timeline:**

- February 17, 2025: Official issuance and effective date of the Action Plan.
- Throughout 2025: Detailed policies to be implemented in phases, including revisions to investment negative lists, expansion of FTZ policies, updated government procurement standards, and improved visa facilitation programs.

#### **Implications:**

- Expansion of pilot programs in telecommunications, healthcare, education, and biomedicine to further open these sectors to foreign investors.
- Full elimination of restrictions on foreign investment in the manufacturing sector, with national treatment extended to foreign firms outside of negative lists.
- Refinement of service sector opening initiatives, especially through pilot zones like Beijing's Service Industry Demonstration Zone and Free Trade Zones.
- Broadened support for foreign investors' equity investments in Chinese listed companies.
- Strengthened government mechanisms to fast-track major foreign-invested projects and safeguard rights.
- Facilitation of easier cross-border movement for foreign businesspeople, including through expanded visa waivers and simplified customs processes.
- Updated public procurement standards to ensure equal treatment of foreign and domestic companies based on production within China.
- Enhanced foreign investors' access to government procurement, financial services, M&A opportunities, and headquarters establishment support.
- Expanded sectors for encouraged foreign investment, prioritizing manufacturing, modern services, and regional development in the central, western, and northeastern regions.

#### **Penalties:**

- The regulation itself does not specify new penalties but emphasizes enforcement of existing laws, regulations, and investment commitments under the Foreign Investment Law, Export Control Law, and associated frameworks. Non-compliance with obligations, such as discriminatory treatment or regulatory violations, would be addressed according to these existing legal provisions.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *Low*
  - No punitive provisions; it's a policy roadmap to encourage foreign investment, relying on existing laws for any non-compliance.
- **Enforcement Volatility:** *Low*

- This is a set of incentives and guidelines rather than strict regulations, so “enforcement” is primarily consistent implementation of facilitative measures.
- **Stage Classification:** *Pre-Final Assembly*
  - Pertains to business setup and operational expansion in China (market entry, investment conditions) before product output.

### **Domestic Product Standards and Implementation Policies in the Field of Government Procurement**<sup>232,233</sup>

The Ministry of Finance (MOF) issued this draft regulation to solicit public feedback on the establishment of national product standards and related support policies within China’s government procurement sector. The objective is to promote the use of domestically produced goods, strengthen industrial competitiveness, and ensure a unified, open, competitive, and orderly government procurement market, while treating domestic and foreign-invested enterprises equally.

#### **Scope:**

- Enterprises supplying goods for government procurement in China, including both domestic and foreign-invested companies.
- Government procurement agencies and procurement participants within China.
- Primarily industrial manufactured goods (excluding agricultural, forestry, animal husbandry, fishery, and mineral products).

#### **Timeline:**

- December 5, 2024: Draft regulation released for public comment.

#### **Implications:**

- Products must be manufactured within China, involving substantial transformation (not simple labeling or packaging).
- Domestic production component costs must meet specific thresholds (set by product category and dynamically adjusted).
- For certain products, key components must be produced and key processes completed within China.
- Made-in-China products that meet the defined standard will receive a 20% price evaluation preference in government procurement bids compared to non-domestic products.

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<sup>232</sup> Xinhua, “财政部就政府采购领域本国产品标准及实施政策征求意见” [Ministry of Finance Seeks Public Opinion on Domestic Product Standards and Implementation Policies in Government Procurement], *CCTV News*, December 5, 2024, <https://news.cctv.com/2024/12/05/ARTIz7xSiiSOReHRH14I5GQG241205.shtml>.

<sup>233</sup> EU SME Centre, “Call for Comments: Draft Notice on Standards and Policies for Domestic Products in Government Procurement in China,” December 11, 2024, <https://www.eusmecentre.org.cn/call-for-comments-draft-notice-on-standards-and-policies-for-domestic-products-in-government-procurement-in-china/>.

- Both Chinese and foreign enterprises can benefit if their products meet the domestic production standards.
- Enterprises need to verify compliance with detailed standards to qualify for the procurement preference.

#### **Penalties:**

- While the draft does not specify direct penalties yet, failure to meet the defined standards would disqualify products from receiving the 20% price preference in government procurement activities.
- Non-compliance with general government procurement regulations (under China's Procurement Law) can result in disqualification from bids, reputational damage, and further administrative penalties.

#### **Evaluation:**

- **Status:** *Draft*
- **Severity:** *Low*
  - No explicit penalties in this draft; non-compliance only means loss of a 20% bid preference or disqualification from certain bids
- **Enforcement Volatility:** *Medium*
  - Enforcement criteria (domestic content thresholds) may evolve, and application could vary by product category, introducing some uncertainty until finalized.
- **Stage Classification:** *Pre-Final Assembly*
  - Drives localization of manufacturing and sourcing before final assembly to meet "Made-in-China" content standards.



## Appendix E. U.K.

### i) Current Regulations

#### **The Product Security and Telecommunications Infrastructure Act 2022 (PSTIA)**<sup>234</sup>

The PSTIA aims to ensure products meet a number of security requirements intended to make them more resilient against cyberattacks. In particular, common or easily guessed passwords cannot be used as default settings or when users set up their new devices, and manufacturers must provide consumers with information on security issues and security updates.

#### **Scope**<sup>235</sup>:

- Manufacturers that produce components or products.
- Products that fall within scope of PSTI are defined as "Relevant Connectable Products" (RCPs) which are made available to consumers and users of such products. These are defined under the Act as the following:
  - Internet-connectable products that are capable of connecting to the internet using a communication protocol that forms part of the Internet Protocol suite to send or receive data over the internet.
  - Network-connectable products that are capable of sending and receiving data transmitted using electronic or electromagnetic energy, that is not an internet connectable product.
  - UK consumer connectable products. This covers new products made available to consumers in the U.K.

#### **Timeline:**

- April 29, 2024: The PSTI entered into force.

#### **Implications**<sup>236</sup>:

- A manufacturer must ensure that each product has a unique or user-defined password, with a ban on the use of universal or easily guessed default passwords.
- A manufacturer must provide publicly available information on how a person can report security issues to the manufacturer. It must also explain when a person will receive an acknowledgment of their report and status updates on the security issue until it is resolved. The 'security issue' could be any security issue with the product.
- A manufacturer must publicise the minimum period for which security updates will be provided for the product. This must be provided pro-actively in a clear, transparent, and

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<sup>234</sup> Castro-Edwards, J, *The Product Security and Telecommunications Infrastructure Act 2022*, Arnold & Porter, 2024, <https://www.arnoldporter.com/en/perspectives/advisories/2024/05/pstia-2022>.

<sup>235</sup> Weeks, A, *Product Security and Telecommunications Infrastructure Act (2022) and Regulations*, 2024, <https://www.complianceandrisk.com/blog/psti-act-2022-and-regulations-2023/>.

<sup>236</sup> Borthwick, A, Simmonds, K and Gibbs, J, *Cyber security for Internet of Things devices: a quick guide to the Product Security and Telecommunications Infrastructure Act*, Womble Bond Dickinson, 2025, <https://www.womblebond Dickinson.com/uk/insights/articles-and-briefings/cyber-security-internet-thin gs-devices-quick-guide-product-security>.

understandable way to someone without prior technical knowledge. If the manufacturer's website or a website it controls contains an invitation to purchase a connectable product, the minimum security update period information must be published on that website.

#### **Penalties:**

- If a product does not comply with the security requirements or the above obligations to monitor and remedy compliance failures are not met, the Office for Product Safety & Standards (OPSS) has a range of enforcement powers.
- The OPSS can serve notices compelling a manufacturer, importer or distributor to remedy the compliance failures, stop making the product available to customers, and / or to recall products.
- The OPSS can also impose penalties for a breach of the PSTI Act of up to £10 million (\$13,370,592.70<sup>237</sup>) or 4% of turnover (whichever is greater).
- In addition, it can impose a further penalty of up to £20,000 per day for each day the breach of the PSTI Act continues.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - While general compliance is straightforward, the potential financial penalties are substantial (up to £10 million (\$13,370,592.70) or 4% of global turnover), and enforcement powers include product recalls and sales bans.
- **Enforcement Volatility:** *Low*
  - The enforcement body (OPSS) has clearly defined powers and responsibilities, and the security requirements are specific and measurable.
- **Stage Classification:** *Pre-Final Assembly*
  - Security design considerations—such as default password restrictions, update support, and incident reporting mechanisms—must be built into the product before it reaches final assembly or market readiness.

#### **General Product Safety Regulations 2005**<sup>238</sup>

The General Product Safety Regulations 2005 provide the basis for ensuring the safety of consumer goods by setting requirements and providing a range of provisions to secure compliance and enforcement with the requirements.

#### **Scope:**

- The regulations apply to products intended for or likely, under reasonably foreseeable conditions, to be used by consumers.

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<sup>237</sup> The conversion rate \$1 = £0.75 on May 6, 2025, at 4:57 PM UTC. The same shall apply hereunder.

<sup>238</sup> The U.K. government, *General Product Safety Regulations 2005: Great Britain*, 2024, <https://www.gov.uk/government/publications/general-product-safety-regulations-2005/general-product-safety-regulations-2005-great-britain>.

- The regulations do not apply to the safety of a product where there are specific provisions of relevant retained EU law. These regulations provide a baseline of safety for applicable consumer products.

### **Timeline:**

- October 1, 2005: The regulations entered into force.

### **Implications<sup>239</sup>:**

- The regulations require the product to come with the following labelling information for traceability purposes:
  - Producer company name
  - Producer company address
  - Product reference, batch number, or similar information
- The regulations require the information to be indicated on the product or its packaging.

### **Penalties<sup>240</sup>:**

- The maximum penalty for the supply of non-compliant products is 12 months imprisonment and/or a £20,000 (\$26,531<sup>241</sup>) fine.
- The regulations give the authorities the power to force manufacturers to recall or replace a faulty product—potentially a far more onerous penalty.
- The authorities have various measures available to them, such as suspension, withdrawal and recall notices, along with final destruction of products.

### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - While the maximum penalty of 12 months imprisonment or a £20,000 (\$26,531) fine is significant, such penalties are typically reserved for serious or repeated breaches. The power of authorities to mandate recalls, replacements, or destruction of products adds further weight to compliance obligations.
- **Enforcement Volatility:** *Low*
  - The regulations have been in force since 2005 with relatively stable enforcement practices. While enforcement is consistent, it is not arbitrary or subject to frequent change.
- **Stage Classification:** *Post-Final Assembly*
  - These regulations primarily apply to the final product placed on the market for consumer use. However, the traceability requirements (e.g., batch number,

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<sup>239</sup> Malloci, I, *UK General Product Safety Regulations 2005: An Overview, 2025*, [https://www.compliancegate.com/uk-general-product-safety-regulations-2005/#Traceability\\_labelling\\_requirements](https://www.compliancegate.com/uk-general-product-safety-regulations-2005/#Traceability_labelling_requirements).

<sup>240</sup> Conformance, *General Product Safety Directive*, <https://www.conformance.co.uk/ce-legislation-information/general-product-safety-directive#summary-observations>.

<sup>241</sup> The conversion rate \$1 = £0.75 on April 20, 2025, at 12:36 AM UTC. The same shall apply hereunder.

manufacturer info) must be considered during the design and labeling stages, which occur before final assembly is complete.

### **Modern Slavery Act 2015**<sup>242</sup>

The Modern Slavery Act aims to ensure that perpetrators of slavery and human trafficking face appropriately severe penalties, while also strengthening support and protection for victims. The Act introduces a legal defence for victims and requires large businesses to publish annual statements outlining the steps they have taken to prevent modern slavery within their operations and supply chains.

#### **Scope**<sup>243</sup>:

- The Act applies to all commercial organizations operating in the U.K. that supply goods or services and have a total turnover of £36 million or more.
- It also applies to commercial organizations formed outside the U.K. that do business in any part of the U.K.

#### **Timeline:**

- July 31, 2015: The Act entered into force.

#### **Implications**<sup>244</sup>:

- Publish a slavery and human trafficking statement (an MSA Statement) for each financial year (within six months of the end of the relevant financial year).
- Have the MSA Statement approved by the board of directors and signed by a director.
- Publish the MSA Statement on their website with a prominent link on the homepage.
- It is possible for the parent to report at a group level on behalf of all in-scope entities where a parent and one or more subsidiaries are required to publish an MSA Statement.

#### **Penalties**<sup>245</sup>:

- The Act does not currently outline any penalties for compliance.

#### **Evaluation:**

- **Status:** *Under Review*
- **Severity:** *Low*
  - Although reputational risk is high, no financial penalties currently exist.

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<sup>242</sup> Home Office, *Modern Slavery Act 2015, The U.K. government, 2018*, <https://www.gov.uk/government/collections/modern-slavery-bill>.

<sup>243</sup> EcoVadis, *UK Modern Slavery Act: What, Why & How to Comply*, <https://ecovadis.com/regulations/uk-modern-slavery-act/>.

<sup>244</sup> Tan, J, Barret, R and Marlow, J, *Unpacking the UK Modern Slavery Act 2015 eight years on*, *Linklaters*, 2023. <https://sustainablefutures.linklaters.com/post/102iorb/unpacking-the-uk-modern-slavery-act-2015-eight-years-on>.

<sup>245</sup> Sollite, N, *A Guide to the UK Modern Slavery Act 2015*, *UpGuard*, 2025, <https://www.upguard.com/blog/uk-modern-slavery-act#:~:text=The%20penalties%20suggested%20include%20fines,standards%20required%20by%20the%20act>.

- **Enforcement Volatility:** *Medium*
  - The regulatory landscape is relatively stable but subject to future changes as the government considers strengthening compliance requirements and oversight.
- **Stage Classification:** *Post-Final Assembly*
  - Reporting obligations apply after a product or service is delivered to market, focusing on corporate governance, supply chain transparency, and ethical sourcing practices.

### **Digital Markets, Competition and Consumers Act 2024 (DMCC)**

One of the DMCC's primary purposes is to protect consumers by strengthening the enforcement of consumer protection law and introducing new consumer rights, including by tackling subscription traps that currently cost consumers £1.6 billion.<sup>246</sup>

In addition to updates to the UK competition regime, the DMCC introduces a new digital markets framework to regulate Big Tech and grants the Competition and Markets Authority (CMA) stronger powers to protect consumers.<sup>247</sup>

#### **Scope<sup>248</sup>:**

- Under the digital markets competition regime, the CMA may designate firms with "Strategic Market Status" (SMS) in relation to a particular digital activity.
- Once designated, the CMA can impose conduct requirements or introduce pro-competition interventions to achieve positive outcomes for UK consumers and businesses.

#### **Timeline<sup>249</sup>:**

- April 6, 2025: The DMCC came into force.
- Spring 2026: The subscription rules will come into force.

#### **Implications<sup>250</sup>:**

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<sup>246</sup> Lloyd-Taylor, G, Chenevix-Trench, F and Meloy, A, *Our guide to the Digital Markets, Competition and Consumers Act 2024 – focusing on consumer law*, Lewis Silkin, 2025, <https://www.lewissilkin.com/insights/2024/09/12/our-guide-digital-markets-competition-consumers-bill-focusing-consumer-law>.

<sup>247</sup> Holmes, M, Weeden, E, Adlakha, V and Vachiraveel, P, *Digital Markets, Competition and Consumers Act 2024 in force now – UK Competition and Merger Control Regime*, Reed Smith, 2025, [https://www.reedsmith.com/en/perspectives/2025/01/digital-markets-competition-and-consumers-act-2024-in-force-now-2#:~:text=Alongside%20updates%20to%20the%20UK,CMA\)%%20enhanced%20consumer%20protection%20powers](https://www.reedsmith.com/en/perspectives/2025/01/digital-markets-competition-and-consumers-act-2024-in-force-now-2#:~:text=Alongside%20updates%20to%20the%20UK,CMA)%%20enhanced%20consumer%20protection%20powers).

<sup>248</sup> Competition and Markets Authority, *CMA sets out initial plans as new digital markets competition regime comes into force*, *The U.K. government*, 2025, <https://www.gov.uk/government/news/cma-sets-out-initial-plans-as-new-digital-markets-competition-regime-comes-into-force>

<sup>249</sup> The Society for Computers and Law, *Consumer aspects of the Digital Markets, Competition and Consumers Act in force*, 2025, <https://www.scl.org/consumer-aspects-of-the-digital-markets-competition-and-consumers-act-in-force/>.

<sup>250</sup> Lloyd-Taylor, G, Chenevix-Trench, F and Meloy, A, *Our guide to the Digital Markets, Competition and Consumers Act 2024 – focusing on consumer law*, Lewis Silkin, 2025,

- The Act strengthens consumer protection by expanding the list of banned commercial practices, such as fake reviews and misleading urgency claims. It also updates legal definitions to better reflect online consumer behavior.
- Businesses must provide clear and prominent pre-contract information, send renewal reminders, and offer easy cancellation options.

#### **Penalties:**

- £300,000 (\$397,965) or 10% of annual global turnover (whichever is higher) in relation to final infringement notices.
- £150,000 (\$198,982) or 5% of annual global turnover (whichever is higher), plus an additional daily penalty if breach persists thereafter of up to £15,000 (\$19,898) or 5% daily global turnover (whichever is higher) for failure to comply with an enforcement direction or a breach of an undertaking made to the CMA under the Act.
- £30,000 (\$39,796) or 1% of annual global turnover (whichever is higher), plus an additional daily penalty if breach persists thereafter of up to £15,000 (\$19,898) or 5% daily global turnover (whichever is higher) for non-compliance with an information notice or for the provision of materially false or misleading information.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *Low*
  - Although this regulation is severe for firms with SMS, given Dell's business model, it is not plausible that Dell will be punished by this regulation.
- **Enforcement Volatility:** *Low*
  - The scope and timeline of this regulation is clear.
- **Stage Classification:** *Post-Final Assembly*
  - The DMCC's requirements primarily relate to how digital platforms operate and how consumer-facing services are delivered after products are placed on the market.

## **ii) Emerging Regulations**

### **The Cyber Security and Resilience Bill**<sup>251</sup>

The Cyber Security Bill will ensure firms providing essential IT services to public services and the wider economy are no longer an easy target for cyber criminals. 1,000 service providers will fall into scope of measures expected to be introduced later this year. The move forms part of the U.K. government's drive to deliver security and renewal by strengthening the critical infrastructure.

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<https://www.lewissilkin.com/insights/2024/09/12/our-guide-digital-markets-competition-consumers-bill-focusing-consumer-law>.

<sup>251</sup> The U.K. government, *New cyber laws to safeguard UK economy and secure long-term growth, 2025*, <https://www.gov.uk/government/news/new-cyber-laws-to-safeguard-uk-economy-secure-long-term-growth>.

**Scope<sup>252</sup>:**

- While subject to further drafting for the Bill, Managed Service Providers will be brought into scope given their “unprecedented access to clients’ IT systems, networks, infrastructure and data.”
- The Policy Statement defines a “managed service” as a service that:
  - is provided to another organization (i.e., not in-house)
  - relies on the use of network and information systems to deliver the service
  - relates to ongoing management support, active administration and/or monitoring of IT systems, IT infrastructure, applications and/or IT networks, including for the purpose of activities relating to cybersecurity
  - involves a network connection and/or access to the customer’s network and information systems

**Timeline:**

- July 2024: The introduction of the Cyber Security and Resilience Bill was announced.
- 2025: The Bill will be introduced to Parliament.

**Implications<sup>253</sup>:**

- More organizations and suppliers, including data center operators and managed service providers (MSPs) will be brought into scope to improve risk assessments, data protection and network security.
- Give regulators “more tools” to help them raise security standards.
- Mandates more detailed incident reporting, expected to include ransomware breaches.
- Grant the government more powers to update regulatory frameworks when needed, to make rules fit for purpose as threats and technology environments evolve and new sectors require regulating.

**Penalties:**

- Will include provisions for daily fines of £100,000 (\$132,655) for organisations failing to comply with government-mandated security directives.

**Evaluation:**

- **Status:** *Draft*
- **Severity:** *High*
  - While specific compliance details are pending, the inclusion of managed service providers and the risk of substantial daily fines—if it takes 10 days to comply with

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<sup>252</sup> Hunton, *UK Government Sets Out Scope for Cyber Security and Resilience Bill, 2025*, <https://www.hunton.com/privacy-and-information-security-law/uk-government-sets-out-scope-for-cyber-security-and-resilience-bill>.

<sup>253</sup> Muncaster, P. (2025). *Cyber Security and Resilience Bill Will Apply to 1000 UK Firms*. *Infosecurity Magazine*. <https://www.infosecurity-magazine.com/news/cyber-security-resilience-bill/>.

the regulation, the fine should be £1000,000 (\$1,326,550)—indicate significant regulatory and financial exposure once enacted.

- **Enforcement Volatility:** *High*
  - As the Bill is still in draft form and subject to further refinement, the scope of enforcement and reporting requirements may change materially before finalization. Future regulatory discretion may also evolve with emerging threats.
- **Stage Classification:** *Post-Final Assembly*
  - The Bill focuses on ongoing IT service provision, monitoring, and response—especially in managed service contexts. As such, the core obligations apply after deployment, targeting firms’ real-time security posture and incident response capabilities.



## Appendix F. Southeast Asia

The electronics manufacturing industry in Southeast Asia is experiencing significant transformation driven by evolving regulatory frameworks, geopolitical shifts, and sustainability imperatives. For Dell Technologies, a global leader in computer technology, navigating this complex regulatory environment is crucial to maintaining an efficient, compliant, and resilient supply chain across the region.<sup>[1]</sup> This part of report provides a comprehensive analysis of the current regulations, emerging regulatory trends, and long-term considerations affecting Dell's supply chain operations in key Southeast Asian countries: Thailand, Philippines, Malaysia, Vietnam, Indonesia, and Singapore.

Southeast Asia has emerged as a critical hub in the global electronics supply chain, particularly as companies implement “China Plus One” strategies to diversify manufacturing operations. The region offers competitive advantages including strategic geographic positioning, growing technical capabilities, supportive government policies, and relatively lower labor costs. However, each country presents unique regulatory challenges and opportunities that Dell must navigate to optimize its regional operations.

### **i) Current Regulations**

#### **Thailand**

##### **Board of Investment (BOI) Incentives for Electronics Manufacturing**

###### **Summary:**

- Thailand's Board of Investment (BOI) implements a comprehensive incentive program for electronics manufacturing that establishes preferential conditions while imposing specific regulatory requirements (Thailand Board of Investment, 2024a)<sup>254</sup>. These incentives create a favorable regulatory environment for electronics manufacturing investments, with specific provisions for advanced electronics, semiconductor fabrication, and supporting industries.

###### **Scope:**

- The incentives apply to new investments and expansion projects in Thailand's electronics sector, with different tiers based on investment value, technology level, and strategic importance. They cover tax incentives, import duty exemptions, land ownership rights, and work permit facilitation for qualifying companies in Dell's supply chain.

###### **Timeline:**

- Major revision through Thailand Plus package in 2019
- Enhanced electronics sector incentives announced in 2022

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<sup>254</sup> Thailand Board of Investment. *Thailand Investment Review Newsletter*, July 2024. Thailand Board of Investment. [https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR\\_Newsletter\\_July2024.pdf](https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR_Newsletter_July2024.pdf)

- Latest incentive framework updated in January 2024
- Current framework valid until 2027

#### **Requirements/Implications:**

- Minimum investment thresholds based on project category
- Technology transfer and local personnel development requirements
- Environmental compliance standards
- Regular reporting on investment implementation
- Restrictions on project modifications without approval
- Domestic market sales limitations for certain incentive categories
- Local sourcing requirements for specific components
- Research and development spending targets for highest incentive tiers

#### **Penalties:**

- Withdrawal of tax incentives for non-compliance with terms
- Retroactive taxation if conditions are not met
- Revocation of import duty exemptions
- Potential blacklisting from future incentive programs
- Administrative fines for reporting violations

#### **Evaluation:**

- **Status:** *Effective*
  - Fully implemented and currently in effect for Dell
- **Severity:** *Medium*
  - Penalties include blacklisting and fines, but primarily financial impact through loss of incentives, not reaching the >\$5M threshold or operational shutdown for High severity).
- **Enforcement Volatility:** *Low*
  - Consistent application with transparent guidelines and minimal deviations.
- **Stage Classification:** Affects both pre-assembly (manufacturing) and post-assembly (testing, packaging) operations

#### **Eastern Economic Corridor (EEC) Act**

##### **Summary:**

- The Eastern Economic Corridor (EEC)<sup>255</sup> Act establishes a special economic zone with enhanced incentives and streamlined regulations for targeted industries, including advanced electronics and digital technology. This legislation creates a distinct regulatory environment designed to attract high-value manufacturing and innovation activities to Thailand's eastern seaboard.

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<sup>255</sup> Royal Thai Embassy, Washington D.C. (n.d.). *Eastern Economic Corridor (EEC)*. Retrieved from <https://washingtondc.thaiembassy.org/en/page/eastern-economic-corridor-eecc?menu=641d81544b5b821b825ac133>

**Scope:**

- The EEC Act applies to investments in designated areas within three eastern provinces (Chachoengsao, Chonburi, and Rayong), with specific provisions for electronics and digital technology investments. It covers investment incentives, land use, infrastructure access, customs procedures, and visa/work permit facilitation.

**Timeline:**

- EEC Act enacted in 2018
- Implementation regulations issued throughout 2018-2020
- Enhanced incentives for electronics announced in 2023
- Ongoing implementation with 20-year development timeframe (2017-2037)

**Requirements/Implications:**

- Location requirements within EEC designated areas
- Minimum investment thresholds for specific incentive tiers
- Technology and knowledge transfer commitments
- Environmental impact assessment compliance
- Smart city and sustainability standards for facilities
- Regular reporting to EEC Office
- Participation in human resource development programs
- Compliance with EEC-specific regulations and standards

**Penalties:**

- Reduction or revocation of special incentives for non-compliance
- Land lease termination for serious violations
- Administrative fines for reporting or operational violations
- Exclusion from EEC privileges for persistent non-compliance
- Potential impact on other government approvals and permits

**Evaluation:**

- **Status:** *Effective*
  - Fully implemented and actively promoted.
- **Severity:** *Medium*
  - Penalties primarily impact access to privileges and involve fines, potentially lease termination, but not full operational shutdown or criminal liability.
- **Enforcement Volatility:** *Medium*
  - Generally consistent policy enforcement with occasional changes or exceptions/adjustments.
- **Stage Classification:** Primarily affects pre-assembly (facility establishment and manufacturing)

**Philippines****CREATE Act (Corporate Recovery and Tax Incentives for Enterprises)****Summary:**

- The CREATE Act (Corporate Recovery and Tax Incentives for Enterprises) is a comprehensive tax reform law that significantly impacts electronics manufacturing in the Philippines (PwC Philippines, 2024)<sup>256</sup>. It restructures the corporate income tax system and modernizes the fiscal incentive framework to enhance the country's competitiveness in attracting investments, particularly in the electronics and semiconductor manufacturing sectors.

#### **Scope:**

- The CREATE Act applies to all businesses operating in the Philippines, with special provisions for export-oriented enterprises and those in priority sectors, including electronics manufacturing. It covers corporate income taxation, fiscal incentives, and investment promotion, affecting both domestic and foreign companies in Dell's supply chain.

#### **Timeline:**

- Enacted in March 2021
- Implemented through 2022-2023
- Enhanced provisions (CREATE MORE) proposed in 2024
- Current incentive structure valid until 2050 for qualifying investments

#### **Requirements/Implications:**

- Reduced corporate income tax rate from 30% to 25% for large corporations
- Special 5% tax on gross income earned (GIE) after income tax holiday period for export enterprises
- Minimum investment requirements based on industry and location
- Performance metrics including job creation, technology transfer, and domestic value addition
- Enhanced deductions for R&D, training, and infrastructure development
- Regular compliance reporting to maintain incentive status
- Domestic market access restrictions for certain incentivized enterprises

#### **Penalties:**

- Revocation of fiscal incentives for non-compliance with terms
- Retroactive taxation at standard rates if performance commitments are not met
- Administrative fines for reporting violations
- Potential blacklisting from future incentive programs

#### **Evaluation:**

- **Status:** *Effective*
  - Fully implemented with ongoing enhancements.
- **Severity (penalties):** *Medium*

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<sup>256</sup> PwC Philippines. *CREATE MORE: Enhancing the Philippines' Investment Incentives Framework*. PwC. 2024, <https://www.pwc.com/ph/en/tax/tax-alerts/2024/pwcphtax-alert-44-create-more.pdf>

- Penalties include potential blacklisting and fines, primarily financial impact through loss of incentives, fitting within the Medium criteria.
- **Enforcement Volatility:** *Medium*
  - Generally consistent application with occasional policy clarifications/exceptions requiring adjustments.
- **Stage Classification:** Affects both pre-assembly operations and post-assembly activities through different incentive tiers

## Malaysia

### **Malaysia Semiconductor Export Control Regulations**

#### **Summary:**

- Malaysia has implemented comprehensive export control regulations for semiconductors and related electronics in response to global technology competition and security concerns (Tradeimex, 2024a)<sup>257</sup>. These regulations establish a framework for controlling the export of advanced semiconductor technologies, manufacturing equipment, and related components to ensure compliance with international agreements while maintaining Malaysia's position as a key player in the global semiconductor supply chain.

#### **Scope:**

- The regulations cover semiconductor manufacturing equipment, advanced integrated circuits, specialized manufacturing materials, and related technologies. They apply to all companies operating in Malaysia's electronics sector, including manufacturers, exporters, and technology providers in Dell's supply chain.

#### **Timeline:**

- Initial framework established in 2023
- Comprehensive regulations implemented in Q1 2024
- Regular updates to controlled items list, with most recent in March 2025
- Ongoing implementation with quarterly compliance reviews

#### **Requirements/Implications:**

- Export licensing requirements for specified semiconductor technologies and equipment
- End-user verification for sensitive technology transfers
- Documentation of technology specifications and intended use
- Regular reporting of export activities for controlled items
- Supply chain due diligence requirements
- Record-keeping for technology transfers and exports
- Training requirements for compliance personnel

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<sup>257</sup> Tradeimex. *Malaysia Chipset Exports: Navigating Semiconductor Regulations Amid US Pressure*. Tradeimex. 2024  
<https://www.tradeimex.in/blogs/malaysia-chipset-exports-semiconductor-regulations-us-pressure>

- Secure handling protocols for controlled technologies

#### **Penalties:**

- Administrative fines up to RM 1 million (approx. \$210,000 USD - Low Severity)
- Criminal penalties including imprisonment for willful violations (High Severity)
- Suspension or revocation of export privileges (High Severity)
- Mandatory remedial compliance programs
- Potential blacklisting from government contracts (Medium Severity)

#### **Evaluation:**

- **Status:** *Effective*
  - Fully implemented with active enforcement.
- **Severity (penalties):** *High*
  - Criminal liability and potential revocation of export privileges substantially impact operations and legal exposure.
- **Enforcement Volatility:** *Medium*
  - Enforcement becoming more consistent but still requires periodic adjustments as the system matures.
- **Stage Classification:** Primarily affects pre-assembly
  - manufacturing equipment and components

## **Vietnam**

### **Decree 18/2021/ND-CP on Semiconductor Investment Incentives**

#### **Summary:**

- Decree 18/2021/ND-CP establishes a comprehensive incentive framework specifically for semiconductor and advanced electronics investments in Vietnam (Luật Việt Nam, 2025a)<sup>258</sup>. This regulation creates preferential conditions for investments in semiconductor manufacturing, design, testing, and supporting industries to strengthen Vietnam's position in the global electronics supply chain.

#### **Scope:**

- The decree applies to investments in semiconductor manufacturing, integrated circuit design, electronic component production, and related high-tech activities. It covers tax incentives, land access, import duty exemptions, and other preferential policies for qualifying projects in Dell's supply chain.

#### **Timeline:**

- Enacted in March 2021
- Implementation guidelines issued in Q3 2021
- Enhanced incentives announced in January 2024

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<sup>258</sup> Luật Việt Nam. *Complete Guide to Vietnam's Semiconductor Investment Policies 2025*. Luật Việt Nam. <https://english.luatvietnam.vn/legal-news/complete-guide-to-vietnams-semiconductor-investment-policies-2025-4729-100816-article.html>

- Current framework valid through 2030

#### **Requirements/Implications:**

- Minimum investment thresholds based on project category
- Technology level requirements for maximum incentives
- Environmental compliance with advanced standards
- Skilled labor ratio requirements
- R&D expenditure commitments
- Technology transfer and localization targets
- Regular reporting on incentive compliance
- Restrictions on project modifications without approval

#### **Penalties:**

- Reduction or revocation of incentives for non-compliance
- Retroactive tax assessments for disqualified projects
- Administrative fines for misrepresentation
- Exclusion from future incentive programs for serious violations
- Mandatory compliance programs for minor violations

#### **Evaluation:**

- **Status:** *Effective*
  - Fully implemented with ongoing applications.
- **Severity:** *Medium*
  - Penalties include fines and exclusion from programs, primarily financial/reputational, not meeting High criteria.
- **Enforcement Volatility:** *Medium*
  - Generally consistent application, occasional changes require adjustments.
- **Stage Classification:** Primarily affects pre-assembly (manufacturing investment and setup)

### **QCVN 134:2024/BTTTT - SAR Regulation for Electronic Devices**

#### **Summary:**

- Vietnam's QCVN 134:2024/BTTTT<sup>259</sup> establishes mandatory Specific Absorption Rate (SAR) limits and testing requirements for handheld and body-worn radio equipment, including many electronic devices in Dell's product portfolio. This technical regulation ensures that electronic devices meet safety standards for radio frequency exposure when used by consumers.

#### **Scope:**

- The regulation applies to wireless electronic devices that transmit radio frequency energy

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<sup>259</sup> Bộ Thông tin và Truyền thông. *Thông tư số 19/2024/TT-BTTTT của Bộ Thông tin và Truyền thông: Ban hành Quy chuẩn kỹ thuật quốc gia về mức hấp thụ riêng đối với thiết bị vô tuyến cầm tay và đeo trên cơ thể người.* December 31, 2024. Retrieved from <https://mic.gov.vn/van-ban-phap-luat/25053.htm>

and are used in close proximity to the human body. This includes laptops, tablets, smartphones, and other wireless devices manufactured or sold in Vietnam. It covers testing methodologies, SAR limits, certification procedures, and labeling requirements.

**Timeline:**

- Issued in January 2024
- Transition period through June 2024
- Full enforcement beginning July 2024
- Annual certification renewal requirements

**Requirements/Implications:**

- Compliance with specified SAR limits for different device categories
- Testing by accredited laboratories using standardized methodologies
- Technical documentation including test reports and product specifications
- Certification by Vietnam's Ministry of Information and Communications
- Product labeling with conformity marks
- Import clearance procedures for certified products
- Market surveillance compliance
- Recertification when product specifications change

**Penalties:**

- Import restrictions for non-compliant products (High Severity)
- Market withdrawal orders for uncertified devices (Medium/High Severity - operational impact)
- Administrative fines up to VND 100 million (approx. \$3,900 USD - Low Severity)
- Business license implications for repeated violations (High Severity)
- Mandatory product recalls for safety violations (Medium Severity)
- Potential criminal liability for fraudulent certification (High Severity)

**Evaluation:**

- **Status:** *Effective*
  - Recently implemented with active enforcement.
- **Severity (penalties):** *High*
  - Potential import restrictions, business license implications, and criminal liability constitute substantial impact.
- **Enforcement Volatility:** *Medium*
  - Enforcement mechanisms still maturing, suggesting occasional changes or exceptions.
- **Stage Classification:** Primarily affects post-assembly (finished products) but has implications for component selection and design (pre-assembly)

**Indonesia**



## **SNI Certification for Electronic Products**

### **Summary:**

- Indonesia implements mandatory Indonesian National Standard (SNI)<sup>260</sup> certification for various electronic products to ensure safety, quality, and performance standards. These regulations establish technical requirements, testing methodologies, and certification procedures for electronics manufactured or sold in Indonesia.

### **Scope:**

- SNI certification requirements apply to specified categories of electronic products, including many items in Dell's product portfolio. They cover safety standards, performance requirements, electromagnetic compatibility, energy efficiency, and other technical parameters depending on product category.

### **Timeline:**

- Ongoing implementation with product-specific timelines
- Major expansion of covered products in 2022-2023
- Latest technical standards updates in 2024
- Regular review and revision of product categories

### **Requirements/Implications:**

- Compliance with specified technical standards for each product category
- Testing by approved laboratories using standardized methodologies
- Factory inspection for manufacturing quality control
- Product labeling with SNI mark
- Documentation including test reports and technical files
- Import clearance procedures for certified products
- Recertification when product specifications change
- Market surveillance compliance

### **Penalties:**

- Import restrictions for non-compliant products (High Severity)
- Market withdrawal orders for uncertified devices (Medium/High Severity - operational impact)
- Administrative fines based on violation severity
- Business license implications for repeated violations (High Severity)
- Product recalls for safety violations (Medium Severity)
- Potential criminal liability for fraudulent certification (High Severity)

### **Evaluation:**

- **Status:** *Effective*

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<sup>260</sup> International Trade Administration. Indonesia - Standards for Trade. In *Country Commercial Guide*. January 9, 2024 Retrieved from <https://www.trade.gov/country-commercial-guides/indonesia-standards-trade>

- Fully implemented with active enforcement.
- **Severity:** High
  - Potential import restrictions, business license implications, and criminal liability constitute substantial impact.
- **Enforcement Volatility:** *Medium*
  - Generally consistent but occasional enforcement campaigns indicate potential for exceptions/changes.
- **Stage Classification:** Primarily affects post-assembly (finished products) but has implications for component selection and design (pre-assembly)

## Singapore

### Strategic Goods Control Act and Regulations

#### Summary:

- Singapore's Strategic Goods Control Act and its implementing regulations establish a comprehensive export control regime for strategic goods and technology, including advanced electronics and semiconductor manufacturing equipment (AEB, 2024)<sup>261</sup>. These regulations ensure Singapore's compliance with international non-proliferation regimes while maintaining its position as a trusted hub for high-tech manufacturing and trade.

#### Scope:

- The regulations apply to a wide range of strategic goods, technology, and software, including many electronics components and manufacturing equipment in Dell's supply chain. They cover export, re-export, transit, transshipment, brokering, and intangible technology transfers related to controlled items.

#### Timeline:

- Strategic Goods Control Act enacted in 2002
- Major amendments implemented in 2018
- Latest control list updates in January 2024
- Ongoing implementation with quarterly updates to guidance

#### Requirements/Implications:

- Permit requirements for export, re-export, and transit of controlled items
- End-user verification and screening procedures
- Catch-all controls for non-listed items with potential military applications
- Record-keeping for strategic goods transactions
- Internal compliance program implementation
- Regular training for personnel handling controlled items
- Technology transfer controls for technical data and assistance

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<sup>261</sup> AEB. *Singapore Export Control Compliance: A Comprehensive Guide*. 2024, AEB. <https://www.aeb.com/en/magazine/articles/singapore-export-control-compliance.php>

- Broker registration for intermediary activities

#### **Penalties:**

- Fines up to SGD 100,000 (approx. \$74,000 USD - Low Severity) for first offense
- Imprisonment up to 3 years for willful violations (High Severity - criminal liability)
- Fines up to SGD 200,000 (approx. \$148,000 USD - Low Severity) for repeat offenses
- Forfeiture of goods involved in violations (High Severity - operational impact/export restrictions)
- Suspension or revocation of trading privileges (High Severity)
- Corporate liability for offenses by employees

#### **Evaluation:**

- **Status:** *Effective*
  - Fully implemented with active enforcement.
- **Severity:** *High*
  - Potential criminal liability, forfeiture of goods, and revocation of trading privileges constitute substantial impact.
- **Enforcement Volatility:** *Low*
  - Consistent and transparent enforcement with minimal deviations.
- **Stage Classification:** Affects both pre-assembly (equipment and components) and post-assembly (finished product export)

### **Consumer Protection (Safety Requirements) Regulations**

#### **Summary:**

- Singapore's Consumer Protection (Safety Requirements) Regulations establish mandatory safety standards and certification requirements for specific categories of consumer products, including many electronic devices (ASEAN Briefing, 2024a)<sup>262</sup>. These regulations ensure that products meet safety standards before they can be sold in Singapore.

#### **Scope:**

- The regulations apply to 33 categories of controlled goods, including many electronic products in Dell's portfolio such as power adapters, chargers, and certain IT equipment. They cover safety standards, testing requirements, certification procedures, and registration obligations for suppliers.

#### **Timeline:**

- Regulations established under the Consumer Protection (Trade Descriptions and Safety Requirements) Act
- Regular updates to controlled goods categories
- Latest technical standards referenced in 2023

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<sup>262</sup> ASEAN Briefing. *Why Singapore is the Top Choice for Semiconductor Companies in 2024*. ASEAN Briefing. <https://www.aseanbriefing.com/news/why-singapore-is-the-top-choice-for-semiconductor-companies-in-2024/>

- Ongoing implementation with annual registration renewal

#### **Requirements/Implications:**

- Compliance with specified safety standards for each product category
- Testing by accredited laboratories
- Registration with Enterprise Singapore
- Product marking with SAFETY Mark
- Technical file maintenance for registered products
- Batch testing and quality control requirements
- Import and customs clearance procedures
- Market surveillance compliance

#### **Penalties:**

- Fines up to SGD 10,000 (approx. \$7,400 USD - Low Severity) for first offense
- Imprisonment up to 2 years for serious violations (High Severity - criminal liability)
- Fines up to SGD 20,000 (approx. \$14,800 USD - Low Severity) for repeat offenses
- Product recalls for safety non-compliance (Medium Severity - operational impact)
- Import restrictions for unregistered products (High Severity - operational impact)
- Supplier deregistration for persistent violations (Medium/High Severity - operational impact)

#### **Evaluation:**

- **Status:** *Effective*
  - Fully implemented with active enforcement.
- **Severity:** *High*
  - Potential criminal liability and import restrictions constitute substantial impact.
- **Enforcement Volatility:** *Low*
  - Consistent and transparent enforcement with minimal deviations.
- **Stage Classification:** Primarily affects post-assembly (finished products) but has implications for component selection and design (pre-assembly)

### **ii) Emerging Regulations**

#### **Thailand**

#### **Draft Electronics Industry Promotion Act**

##### **Summary:**

- Thailand is developing a comprehensive Electronics Industry Promotion Act that will establish new regulatory frameworks, incentives, and requirements specifically for the electronics sector (Thailand Board of Investment, 2024b)<sup>263</sup>. This emerging legislation

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<sup>263</sup> Thailand Board of Investment. *Thailand Investment Review Newsletter*, July 2024. Thailand Board of Investment. [https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR\\_Newsletter\\_July2024.pdf](https://www.boi.go.th/upload/ejournal/2024/Issue3/TIR_Newsletter_July2024.pdf)

aims to strengthen Thailand's position in the global electronics value chain while ensuring technology advancement, sustainability, and domestic capability development.

**Scope:**

- The draft legislation covers the entire electronics ecosystem, including component manufacturing, assembly, testing, and supporting industries. It includes provisions for both foreign and domestic companies, with special focus on advanced electronics, semiconductor manufacturing, and emerging technologies.

**Timeline:**

- Initial framework announced in 2023
- Draft legislation expected by Q3 2025
- Public consultations planned for 2025-2026
- Potential enactment by 2027

**Requirements/Implications:**

- Enhanced incentives for strategic electronics investments
- Technology transfer and localization requirements
- Research and development spending targets
- Workforce development and training mandates
- Environmental sustainability standards
- Supply chain resilience and diversification requirements
- Regular reporting on industry development metrics
- Participation in industry cluster initiatives

**Penalties:**

- Tiered approach with incentives for compliance
- Exclusion from special benefits for non-compliance
- Potential restrictions on market access for non-participants
- Graduated financial penalties for commitment violations
- Mandatory participation in development programs

**Evaluation:**

- **Status:** *Draft*
  - Policy is in the development stage.
- **Severity:** *Medium*
  - Expected penalties focus on loss of benefits, market access restrictions, and fines, aligning with Medium criteria.
- **Enforcement Volatility:** *Medium*
  - Likely moderate volatility during initial implementation as standards evolve, requiring periodic adjustments.
- **Stage Classification:** Will affect both pre-assembly (manufacturing) and post-assembly (testing, packaging) operations

## **Philippines**

### **Semiconductor and Electronics Industry Act (SEIA)**

#### **Summary:**

- The proposed Semiconductor and Electronics Industry Act (SEIA) aims to establish a comprehensive framework to strengthen the Philippines' position in the global semiconductor and electronics value chain (PwC Philippines, 2024)<sup>264</sup>. This emerging legislation will create targeted incentives, development programs, and regulatory frameworks specifically designed for the electronics sector beyond the general provisions of the CREATE Act.

#### **Scope:**

- The draft legislation covers the entire electronics and semiconductor ecosystem, including manufacturing, design, research and development, testing, and supporting industries. It includes provisions for both foreign and domestic companies, with special focus on strategic segments of the electronics value chain.

#### **Timeline:**

- Draft legislation introduced in 2024
- Public consultations ongoing through 2025
- Expected enactment by late 2025 or early 2026
- Phased implementation planned from 2026-2028

#### **Requirements/Implications:**

- Enhanced fiscal incentives for strategic electronics segments
- Dedicated funding for industry-specific infrastructure
- Streamlined regulatory processes for electronics manufacturers
- Industry-academia collaboration requirements
- Local content and value addition targets
- Technology transfer and skills development mandates
- Special visa programs for technical experts
- Export performance requirements for maximum benefits

#### **Penalties:**

- Graduated incentive reductions for partial compliance
- Disqualification from special programs for significant violations
- Financial penalties for misrepresentation of qualifications
- Repayment of incentives with interest for major non-compliance

#### **Evaluation:**

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<sup>264</sup> PwC Philippines. *CREATE MORE: Enhancing the Philippines' Investment Incentives Framework*. 2024, PwC. <https://www.pwc.com/ph/en/tax/tax-alerts/2024/pwcphtax-alert-44-create-more.pdf>

- **Status:** *Draft*
  - Draft stage with active stakeholder consultation.
- **Severity:** *Medium*
  - Expected penalties focus on incentive withdrawal and financial penalties, not High criteria like operational shutdown.
- **Enforcement Volatility:** *Medium*
  - Likely moderate volatility during initial implementation as standards are established.
- **Stage Classification:** Will affect both pre-assembly (manufacturing) and post-assembly (testing, packaging) operations

## Malaysia

### **National Semiconductor Strategy Implementation Framework**

#### **Summary:**

- Malaysia is developing a comprehensive National Semiconductor Strategy Implementation Framework that will establish new regulatory standards, incentives, and requirements for the semiconductor and advanced electronics industry (Tradeimex, 2024b)<sup>265</sup>. This emerging regulation aims to strengthen Malaysia's position in the global semiconductor value chain while ensuring security, sustainability, and technological advancement.

#### **Scope:**

- The proposed framework will cover the entire semiconductor ecosystem, including design, fabrication, assembly, testing, and supporting industries. It includes provisions for both foreign and domestic companies, with special focus on advanced manufacturing, research and development, and workforce development.

#### **Timeline:**

- Strategy announced in 2024
- Implementation framework draft expected by Q3 2025
- Phased implementation planned from 2026-2030
- Full regulatory framework in place by 2027

#### **Requirements/Implications:**

- Enhanced security protocols for sensitive technology
- Sustainability standards for semiconductor manufacturing
- Local workforce development requirements
- Technology transfer and localization targets
- Supply chain resilience and diversification mandates

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<sup>265</sup> Tradeimex. *Malaysia Chipset Exports: Navigating Semiconductor Regulations Amid US Pressure*. 2024, Tradeimex.

<https://www.tradeimex.in/blogs/malaysia-chipset-exports-semiconductor-regulations-us-pressure>

- Collaborative R&D requirements with local institutions
- Data sharing for industry development planning
- Regular compliance reporting and certification

#### **Penalties:**

- Tiered compliance approach with initial guidance before enforcement
- Exclusion from strategic industry benefits for non-compliance
- Financial penalties for significant violations
- Potential restrictions on expansion approvals
- Mandatory remediation programs for serious deficiencies

#### **Evaluation:**

- **Status:** *Draft*
  - Development stage with stakeholder consultation.
- **Severity (penalties):** *Medium*
  - Expected penalties focus on loss of benefits, fines, and potential expansion restrictions, fitting Medium criteria.
- **Enforcement Volatility:** *Medium*
  - Likely moderate volatility during initial implementation as standards evolve.
- **Stage Classification:** Will affect both pre-assembly (manufacturing) and post-assembly (testing, packaging) operations

### **Indonesia**

#### **Draft Electronics Industry Roadmap 2025-2030**

##### **Summary:**

- Indonesia is developing a comprehensive Electronics Industry Roadmap 2025-2030 that will establish new regulatory frameworks, incentives, and requirements for the electronics manufacturing sector (Cekindo, 2024b)<sup>266</sup>. This emerging regulation aims to strengthen Indonesia's position in the global electronics value chain while increasing domestic value addition and technological capabilities.

##### **Scope:**

- The draft roadmap covers the entire electronics manufacturing ecosystem, including component production, assembly, testing, and supporting industries. It includes provisions for both foreign and domestic companies, with special focus on strategic segments including computing hardware, telecommunications equipment, and semiconductor assembly.

##### **Timeline:**

- Initial framework announced in 2024

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<sup>266</sup> Cekindo. "What Is TKDN in Indonesia: Complete Guide to Local Content Requirements - Part 1." Cekindo, 2024, <https://www.cekindo.com/blog/what-is-tkdn-indonesia>



- Draft roadmap expected by Q3 2025
- Stakeholder consultations through 2025
- Phased implementation planned from 2026-2030

#### **Requirements/Implications:**

- Increased TKDN thresholds for specified electronics categories
- Enhanced incentives for strategic electronics investments
- Technology transfer requirements for foreign manufacturers
- Research and development spending targets
- Workforce development and training requirements
- Supply chain localization targets
- Digital transformation standards for manufacturing
- Regular reporting on roadmap implementation metrics

#### **Penalties:**

- Tiered approach with incentives for compliance
- Market access restrictions for non-participating companies
- Exclusion from government procurement opportunities
- Graduated financial penalties for commitment violations
- Import restrictions for products with domestic alternatives

#### **Evaluation:**

- **Status:** *Draft*
  - Early development stage.
- **Severity (penalties):** *High*
  - Expected penalties include significant market access implications like import restrictions and exclusion from government procurement, meeting High criteria.
- **Enforcement Volatility:** *High*
  - Likely high volatility during initial implementation as standards evolve.
- **Stage Classification:** Will affect both pre-assembly (component sourcing) and post-assembly (market access) operations

### **iii) Long-Term Regulatory Considerations**

#### **Regional Trends Affecting Dell's Supply Chain**

##### **1. Increasing Localization and Domestic Value Addition Requirements**

Across Southeast Asia, there is a clear trend toward increasing localization and domestic value addition requirements, though the approach varies by country (Source of Asia, 2025)<sup>267</sup>. Indonesia is implementing the most aggressive localization policies through its TKDN

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<sup>267</sup> Source of Asia. *Navigating the Global Supply Chain and Vietnam's Position 2025-2026*. Source of Asia. <https://www.sourceofasia.com/navigating-the-global-supply-chain-and-vietnams-position-2025-2026/>

requirements, with thresholds likely to increase by 5-10% for most electronics categories by 2030 (East Asia Forum, 2024)<sup>268</sup>.

Vietnam and Thailand are pursuing more balanced approaches, focusing on strategic segments of the value chain while maintaining openness to global integration.

Malaysia is targeting higher-value activities rather than simple assembly, with incentives increasingly tied to technology transfer and R&D activities.

Philippines is gradually shifting from pure assembly operations to higher value-added activities through targeted incentives and development programs.

Singapore maintains the most open approach but is increasingly focused on developing specific strategic capabilities in advanced electronics.

- **Implications for Dell:**

- Supply chain restructuring will be necessary to meet varying local content requirements across the region.
- Strategic decisions about which value chain activities to locate in which countries based on their regulatory approaches.
- Increased complexity in regional production networks to optimize compliance while maintaining efficiency.
- Need for stronger relationships with local suppliers and manufacturing partners.

## **2. Sustainability and Circular Economy Transition**

All six countries are moving toward more comprehensive environmental regulations with increasing emphasis on circular economy principles, though at different paces.

Singapore is leading the region with its comprehensive Electronics Sustainability and Circular Economy Framework, setting standards that may influence regional approaches (ASEAN Briefing, 2024b)<sup>269</sup>.

Thailand and Malaysia are developing moderately ambitious frameworks with specific targets for energy efficiency, waste reduction, and product lifecycle management.

Vietnam is implementing its Circular Economy Transition Framework with phased targets through 2030.

Indonesia and Philippines are in earlier stages but are developing extended producer responsibility frameworks that will significantly impact electronics manufacturing.

- **Implications for Dell:**

- Need for product design adaptations to meet varying sustainability requirements across the region.
- Investment in regional recycling and take-back infrastructure.
- Development of more sophisticated materials tracking and lifecycle management systems.
- Opportunity to leverage sustainability leadership as a competitive advantage in

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<sup>268</sup> East Asia Forum. *Indonesia's local content requirements will not fix its manufacturing sector malaise*. December 24, 2024,

<https://eastasiaforum.org/2024/12/24/indonesias-local-content-requirements-will-not-fix-its-manufacturing-sector-malaise/>

<sup>269</sup> ASEAN Briefing. "Why Singapore is the Top Choice for Semiconductor Companies in ASEAN Briefing." 2024 <https://www.aseanbriefing.com/news/why-singapore-is-the-top-choice-for-semiconductor-companies-in-2024/>

government and enterprise markets.

### **Strategic Recommendations for Long-term Regulatory Navigation**

- **Develop a Tiered Compliance Strategy**
  - Implement a tiered compliance approach that establishes baseline compliance standards that meet requirements across all six countries.
  - Develops country-specific compliance modules for unique regulatory requirements.
  - Creates a forward-looking compliance roadmap based on regulatory trends.
  - Integrates compliance considerations into product design and supply chain planning.
- **Invest in Regional Compliance Capabilities**
  - Build stronger regional compliance capabilities through dedicated compliance teams with country-specific expertise.
  - Advanced regulatory monitoring and intelligence systems.
  - Proactive engagement with regulatory development processes.
  - Regular compliance audits and improvement programs.
- **Leverage Sustainability as a Competitive Advantage**
  - Position sustainability leadership as a strategic advantage by exceeding minimum regulatory requirements in key sustainability metrics.
  - Developing regional circular economy infrastructure ahead of regulatory mandates.
  - Implementing consistent sustainability standards across the regional supply chain.
  - Showcasing sustainability achievements to government and enterprise customers.

## Appendix G. India

### i) Current Regulations

#### **The Mines and Minerals Amendment Act<sup>270</sup>**

The Mines and Minerals (Development and Regulation) Amendment Act, 2023 amends the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act). It introduces a new regulatory framework for granting exploration licences for minerals listed in the newly inserted Seventh Schedule, aiming to boost mineral exploration and improve auction efficiency. The Amendment enhances Central Government authority in mineral development, especially regarding strategic and critical minerals.

#### **Scope:**

- Mining companies and exploration agencies.
- State Governments (as granting authorities).
- Private sector participants seeking mineral exploration and mining rights.
- Central Government, via expanded direct oversight powers.

#### **Timeline:**

- 1957: Original Mines and Minerals (Development and Regulation) Act enacted.
- August 9, 2023: Amendment Act passed by Parliament and received Presidential assent.
- August 17, 2023: The Act became effective.

#### **Implications:**

- Expansion of exploration licences could increase mineral production in India, affecting Dell's critical raw materials supply (batteries, electronics components).
- The Central Government can now intervene if States delay auctions for exploration licences, ensuring faster availability of critical minerals.
- Enterprises' supply chain compliance teams must monitor if suppliers engage with new mining operations licensed under this revised framework.
- Environmental, social, and governance (ESG) risks may increase if new mining areas open up — requiring Dell to strengthen supplier screening.

#### **Penalties:**

- Unlawful mineral operations continue to attract penalties under the MMDR Act (e.g., illegal mining, unauthorized extraction).
- Non-compliance with exploration licence conditions can result in termination of licences and potential financial penalties.

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<sup>270</sup> Ministry of Law and Justice, *The Mines and Minerals (Development and Regulation) Amendment Act, 2023*, Act No. 16 of 2023, August 9, 2023, [https://prsindia.org/files/bills\\_acts/acts\\_parliament/2023/Mines\\_and\\_Minerals\\_%28Development\\_and\\_Regulation%29\\_Amendment\\_Act%2C\\_2023.pdf](https://prsindia.org/files/bills_acts/acts_parliament/2023/Mines_and_Minerals_%28Development_and_Regulation%29_Amendment_Act%2C_2023.pdf).

**Evaluation:**

- **Status:** *Effective*
- **Severity:** *High*
  - License revocation, and criminal liability for illegal mining or non-compliance, especially involving critical minerals.
- **Enforcement Volatility:** *Medium*
  - Law is effective, but state-level enforcement may vary.
- **Stage Classification:** *Pre-Final Assembly*
  - Affects raw material sourcing before manufacturing.

**Notification of Schedule-II (Export Policy) of ITC(HS)**<sup>271,272</sup>

In line with India's efforts to modernize and harmonize its export control framework, the Directorate General of Foreign Trade (DGFT) issued the updated Schedule-II (Export Policy) of ITC(HS) in March 2024. This move aims to replace description-heavy export lists with standardized 8-digit ITC-HS codes, align India's export controls with global practices, simplify classification, and enhance transparency for exporters and customs authorities. This notification supplements India's core export control regulations by offering detailed codification of dual-use items, sensitive products, and restricted exports under a unified structure.

**Scope:**

- All Indian exporters of dual-use, restricted, and controlled goods.
- Customs brokers, freight forwarders handling export documentation.
- Re-exporters using Indian-origin goods.
- Specific attention to:
  - Strategic goods (e.g., electronics, semiconductors, aerospace components).
  - Items falling under SCOMET categories<sup>273</sup>.

**Timeline:**

- March 20, 2024: Issuance of Notification No. 60/2023-DGFT updating Schedule-II using 8-digit HS codes, which became effective immediately.

**Implications:**

- Exporters must reference the updated 8-digit ITC(HS) codes when filing shipping bills and export documentation.
- Misclassification or incorrect code usage may result in customs delays, shipment rejections, or legal penalties.

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<sup>271</sup> Directorate General of Foreign Trade, *Notification of Schedule-II (Export Policy) of ITC(HS) 2022*, in *Sync with Finance Act 2024 Dated 16.08.2024*, January 3, 2025, [https://content.dgft.gov.in/Website/Notification\\_ITCHS.pdf](https://content.dgft.gov.in/Website/Notification_ITCHS.pdf).

<sup>272</sup> Archana Rao, "DGFT Updates Schedule II of India's Export Policy," *India Briefing*, January 15, 2025, <https://www.india-briefing.com/news/indias-dgft-updates-export-policy-35827.html>.

<sup>273</sup> Directorate General of Foreign Trade, *Appendix 3 – SCOMET List*, Ministry of Commerce and Industry, Government of India, [https://content.dgft.gov.in/Website/append3\\_o.pdf](https://content.dgft.gov.in/Website/append3_o.pdf).

- Enterprises must update internal product classifications, export compliance systems, and customs documentation templates to reflect the 2024 changes.
- Sensitive or restricted goods (e.g., advanced electronics, specialized materials) may require additional licensing or declarations under the reorganized system.

#### **Penalties:**

- Seizure or confiscation of incorrectly exported goods.
- Suspension or cancellation of export licenses.
- Monetary fines and penalties under the Foreign Trade (Development and Regulation) Act, 1992.
- Potential criminal prosecution for willful or fraudulent export violations.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *Medium*
  - Non-compliance can lead to shipment seizure, fines, and export license suspension. Criminal prosecution is possible only for willful violations, so impact is moderate.
- **Enforcement Volatility:** *Low*
  - Enforcement is predictable and routine. The update aligns export codes with global norms, and customs/DGFT apply clear procedures.
- **Stage Classification:** *Pre- and Post-Final Assembly*
  - This would apply to Dell's suppliers and Dell.

#### **The Integrated Goods and Services Tax (Amendment) Act<sup>274</sup>**

The Integrated Goods and Services Tax (Amendment) Act, 2023 was enacted to modify the IGST Act, 2017. The amendments primarily aim to address regulatory gaps regarding the taxation of online gaming, online money gaming, and clarify place of supply rules when supplying goods to unregistered persons. It strengthens India's indirect tax framework, especially for cross-border supplies of digital services and gaming activities.

#### **Scope:**

- Suppliers of online gaming and online money gaming services.
- E-commerce and digital service providers supplying goods/services across states.
- Foreign companies supplying online money gaming to customers in India.
- Indian entities acting as representatives of foreign online gaming suppliers.

#### **Timeline:**

- March 29, 2017: Original Integrated Goods and Services Tax (IGST) Act enacted.

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<sup>274</sup> Ministry of Law and Justice, *The Integrated Goods and Services Tax (Amendment) Act, 2023*, Act No. 31 of 2023, August 18, 2023, [https://prsindia.org/files/bills\\_acts/acts\\_parliament/2023/The%20Integrated%20Goods%20and%20Services%20Tax%20\(Amendment\)%20Act,%202023.pdf](https://prsindia.org/files/bills_acts/acts_parliament/2023/The%20Integrated%20Goods%20and%20Services%20Tax%20(Amendment)%20Act,%202023.pdf).

- August 18, 2023: Act received Presidential assent and was published in the Gazette of India.
- October 1, 2023: The Act became effective.

### **Implications:**

- Enterprises must ensure correct classification and GST treatment of any digital services offered into India, especially where involving unregistered buyers (B2C sales).
- Supplies of goods to unregistered persons must now use address-based place of supply rules — requiring careful invoicing and system updates.
- While enterprises may not directly offer "online money gaming," any integration with online gaming platforms must assess indirect tax exposure.
- Foreign suppliers of taxable services (if applicable) must register under the Simplified Registration Scheme and pay IGST.

### **Penalties:**

- Non-payment of IGST on cross-border supplies can trigger recovery proceedings.
- Incorrect place of supply declarations may lead to tax shortfall penalties.
- Blocking of websites and services could occur for non-compliance in case of online money gaming suppliers (under Section 69A of the IT Act, 2000).

### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *Medium*
  - Penalties include recovery of unpaid tax, blocking of online access for non-compliant platforms, and reputational risk for digital suppliers. While serious, violations usually trigger administrative rather than criminal actions unless sustained.
- **Enforcement Volatility:** *Low*
  - Enforcement is uniform through India's GST framework and applies clearly to online and cross-border suppliers.
- **Stage Classification:** *Post-Final Assembly*
  - Affects digital service delivery, invoicing, and compliance after product/service launch, particularly for cross-border and online platforms.

### **The Central Goods and Services Tax (Amendment) Act<sup>275</sup>**

The Central Goods and Services Tax (Amendment) Act, 2023 was enacted to modify the CGST Act, 2017, primarily to regulate the taxation of online gaming, online money gaming, and specified actionable claims (e.g., betting, casinos, gambling). It brings digital gaming activities —

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<sup>275</sup> Ministry of Law and Justice, *The Central Goods and Services Tax (Amendment) Act, 2023*, Act No. 30 of 2023, August 18, 2023, [https://prsindia.org/files/bills\\_acts/acts\\_parliament/2023/The%20Central%20Goods%20and%20Services%20Tax%20\(Amendment\)%20Act,%202023.pdf](https://prsindia.org/files/bills_acts/acts_parliament/2023/The%20Central%20Goods%20and%20Services%20Tax%20(Amendment)%20Act,%202023.pdf).

whether skill-based or chance-based — clearly within the GST framework, and clarifies registration obligations for foreign gaming suppliers.

**Scope:**

- Indian and foreign suppliers offering online money gaming.
- Platforms that organize, arrange, or facilitate betting, casinos, gambling, horse racing, lottery, or online gaming.
- Digital platforms handling virtual digital assets involved in online gaming.
- Any person operating digital/electronic platforms through which specified actionable claims are supplied.

**Timeline:**

- March 29, 2017: Central Goods and Services Tax (CGST) Act enacted.
- August 18, 2023: Central Goods and Services Tax (Amendment) Act, 2023 received Presidential assent.
- October 1, 2023: The Act became effective.

**Implications:**

- A person organizing or facilitating supply of "specified actionable claims" is deemed a supplier and liable for GST.
- If engaging with clients operating in online gaming, enterprises must be aware of the strict GST compliance expected from those clients.
- Suppliers of online money gaming services from outside India must register under GST compulsorily.

**Penalties:**

- Standard GST penalties for failure to register, incorrect tax payment, or non-compliance.
- Potential prosecution under GST law if aiding in unregistered supply of taxable actionable claims.
- Regulatory blocking of non-compliant online platforms under broader Indian laws (like IT Act provisions).

**Evaluation:**

- **Status:** *Effective*
- **Severity:** *Medium*
  - Non-compliance can lead to administrative penalties, tax recovery, and potential blocking of digital platforms under the IT Act.
- **Enforcement Volatility:** *Low*
  - All provisions have been effective since October 1, 2023, with clear enforcement mechanisms in place.
- **Stage Classification:** *Post-Final Assembly*
  - Impacts digital service delivery and compliance after product or service launch, particularly for online gaming and specified actionable claims.



## ii) Emerging Regulations

### **The Competition (Amendment) Act**<sup>276</sup>

The Competition (Amendment) Act, 2023 amends the Competition Act, 2002 to strengthen antitrust regulation in India. It introduces new frameworks for settlement and commitment procedures, updates the definitions of anti-competitive agreements, revises thresholds for mergers and acquisitions (combinations), and modernizes penalty frameworks. The amendments align India's competition law with global best practices and aim to expedite enforcement while offering enterprises procedural flexibility.

#### **Scope:**

- All enterprises operating in India, including Indian and foreign companies.
- Digital markets, tech platforms, and traditional industries alike.
- Entities engaged in mergers, acquisitions, combinations, or strategic alliances.
- Enterprises entering into agreements that may restrict competition (horizontal or vertical).

#### **Timeline:**

- January 2003: Original Competition Act enacted.
- April 11, 2023: Competition (Amendment) Act, 2023 received Presidential assent.
- September 10, 2024: Key provisions, including the introduction of a deal value threshold for mergers and acquisitions, became effective.
- Ongoing: The Central Government continues to notify additional sections as deemed necessary for implementation.

#### **Implications:**

- New transaction value threshold ₹2,000 crore (\$234,227)<sup>277</sup> introduced for mandatory merger notification, even if traditional asset/turnover thresholds are not crossed.
- Enterprises could settle or commit to certain corrective measures voluntarily during investigation, avoiding prolonged litigation (Section 48A and 48B).
- Enterprises must review vertical agreements carefully (e.g., exclusive supply or tie-in arrangements), as presumptions against competition can now apply more broadly.
- Enterprises participating indirectly in anti-competitive agreements (even without direct competitors) could be presumed guilty under clarified provisions.

#### **Penalties:**

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<sup>276</sup> Ministry of Law and Justice, *The Competition (Amendment) Act, 2023*, Act No. 9 of 2023, April 11, 2023, [https://prsindia.org/files/bills\\_acts/acts\\_parliament/2023/The%20Competition%20%28Amendment%29%20Act%2C%202023.pdf](https://prsindia.org/files/bills_acts/acts_parliament/2023/The%20Competition%20%28Amendment%29%20Act%2C%202023.pdf).

<sup>277</sup> The conversion rate ₹1 = \$0.0117 was retrieved from Morningstar on April 17, 2025, at 7:19 PM UTC.

- Penalties based on global turnover derived from all products and services in certain cases of abuse or anti-competitive practices.
- Interest liability on delayed penalty payments.
- Disgorgement orders (repayment of illegal gains) possible.
- Director and officer liability continues where responsible for contraventions.

#### **Evaluation:**

- **Status:** *Partially Effective*
- **Severity:** *High*
  - Penalties may be based on global turnover, with disgorgement, director liability, and high fines for anti-competitive conduct, especially under merger control or abuse of dominance.
- **Enforcement Volatility:** *Medium*
  - Several provisions (e.g. settlement, global turnover fines) are still pending notification; scope and timelines may shift.
- **Stage Classification:** *Post-Final Assembly*
  - Applies to corporate conduct, M&A activity, and ongoing market behavior after products or services are in use.

#### **The Telecommunications Act**<sup>278</sup>

The Act was enacted to modernize and consolidate India's telecommunications regulatory framework, replacing outdated laws like the Indian Telegraph Act, 1885, and the Wireless Telegraphy Act, 1933. The Act aims to streamline the regulation of telecommunication services, networks, spectrum assignment, and related matters, aligning with contemporary technological advancements.

#### **Scope:**

- Telecommunication service providers, including mobile, internet, and satellite operators.
- Entities involved in establishing, operating, or maintaining telecommunication networks.
- Saikrishna Associates
- Manufacturers and users of radio equipment.
- Organizations assigned spectrum by the government.

#### **Timeline:**

- December 24, 2023: The Act received Presidential assent and was published in the Gazette of India.
- June 26, 2024: Sections 1, 2, 10–30, 42–44, 46, 47, 50–58, 61, and 62 came into force.
- July 5, 2024: Sections 6–8, 48, and 59(b) were brought into effect.
- Ongoing: The Central Government continues to notify additional sections as deemed necessary for implementation.

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<sup>278</sup> Ministry of Law and Justice, *The Telecommunications Act, 2023*, Act No. 44 of 2023, December 24, 2023, <https://egazette.gov.in/WriteReadData/2023/250880.pdf>.

### Implications:

- If enterprises provide services or equipment involving telecommunication functions in India, it may be subject to authorization or licensing under the new Act.
- Possession or use of radio equipment (e.g., wireless networking hardware) may require compliance with the Act's provisions.
- Enterprises may need to ensure that any services offered comply with user identification requirements, including biometric-based verification, if applicable.
- Data related to telecom identifiers must align with new privacy, security, and authorization rules.
- Engagement with spectrum-related activities (e.g., satellite communication-linked hardware or services) must adhere to the updated spectrum management framework.

### Penalties:

- Monetary penalties for unauthorized telecommunication services or possession of radio equipment without authorization.
- Revocation of authorization or license.
- Seizure of unauthorized equipment.
- Criminal prosecution for significant breaches affecting national security or public interest.

### Evaluation:

- **Status:** *Partially Effective*
- **Severity:** *High*
  - Violations can trigger heavy consequences: monetary penalties, license revocation, equipment seizure, and even criminal prosecution for serious breaches (national security/public interest).
- **Enforcement Volatility:** *Medium*
  - While core telecom licensing enforcement is stable, new provisions (e.g. spectrum management updates) are still rolling out, causing some uncertainty in how strictly they'll be applied.
- **Stage Classification:** *Pre- and Post-Final Assembly*
  - Affects hardware imports, radio/wireless components (pre) and network services, compliance checks (post) within India.

### **Draft Telecom Rules on Interception, Temporary Suspension of Services, and Cyber Security**<sup>279</sup>

The Draft Telecom Rules, 2024 were issued under the Telecommunications Act, 2023 to regulate interception of communications, temporary suspension of telecom services, and

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<sup>279</sup> Ministry of Communications, *Draft Telecom Rules on Interception, Temporary Suspension of Services, and Cyber Security, 2024*, PRS Legislative Research, 2024, <https://prsindia.org/billtrack/2024-draft-telecom-rules-on-interception-temporary-suspension-of-services-and-cyber-security>.

cybersecurity obligations for telecom entities. They replace and update existing rules carried over from the now-repealed Indian Telegraph Act, 1885, bringing new frameworks aligned with national security needs and evolving cyber threats.

The rules introduce detailed procedures for interception orders, mandatory service suspensions during emergencies, cybersecurity audits, and lawful data sharing mandates, tightening compliance requirements for telecom-related activities.

**Scope:**

- Telecom service providers (including mobile, internet, satellite operators).
- Telecom infrastructure operators.
- Cloud service providers involved in telecom functions.
- Entities offering wireless, IoT, or device-based communication services.
- Companies possessing radio equipment registered under the Telecommunications Act.

**Timeline:**

- August 2024: Draft rules released by Department of Telecommunications (DoT) for public feedback.

**Implications:**

- Enterprises may need to ensure that any telecommunications-related services (e.g., private 5G, connected infrastructure) comply with lawful interception obligations.
- Traffic data, including type, routing, duration, and location information, may be required to be shared with government agencies for cybersecurity purposes.
- Appointment of a Chief Telecom Security Officer (CTSO) and establishment of a formal Cyber Security Policy may become mandatory for telecom service operators.
- Telecom equipment identifiers must be properly registered with authorities.
- Stronger cybersecurity audits could extend to Dell's enterprise networking products and services integrated with telecom networks.

**Penalties:**

- Revocation of authorization or suspension of service rights for non-compliance.
- Monetary fines as prescribed under the Telecommunications Act 2023.
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- Potential seizure of non-compliant equipment or platforms.
- Criminal liability for unauthorized interception or failure to secure communication networks.

**Evaluation:**

- **Status:** *Draft*
- **Severity:** *High*
  - The draft outlines revocation of telecom authorizations, equipment seizure, and criminal liability, especially for unauthorized interception or non-secure

networks. Likely to impose major compliance burdens on telecom-aligned enterprises

- **Enforcement Volatility:** *High*
  - Still a draft under public consultation. The scope and stringency of obligations may shift before formal adoption, though core national security mandates are likely to persist.
- **Stage Classification:** *Post-Final Assembly*
  - Applies after services are deployed, impacting active communication networks, enterprise devices, and data-sharing operations in production environments.

### **The Digital Personal Data Protection Act<sup>280</sup>**

The Digital Personal Data Protection Act, 2023 establishes a legal framework for processing digital personal data in India. It seeks to balance individuals' right to protect their personal data with organizations' need to process such data for lawful purposes. The Act introduces clear rules on consent, data fiduciaries' obligations, cross-border data flows, grievance redressal mechanisms, and enforcement through a newly created Data Protection Board.

#### **Scope:**

- Any entity (individuals, companies, government bodies) processing digital personal data inside India.
- Foreign entities offering goods or services to individuals in India (i.e., extra-territorial reach).
- Significant Data Fiduciaries (large-scale data handlers) subject to additional compliance obligations.
- Consent Managers operating platforms for managing users' consent.

#### **Timeline:**

- August 11, 2023: Act received Presidential assent.

#### **Implications:**

- Enterprises must process personal data only with valid user consent or under permitted legitimate uses.
- Mandatory appointment of a Data Protection Officer (if an enterprise is designated as a Significant Data Fiduciary).
- Obligations to notify individuals of data breaches.
- Restrictions on cross-border transfer of personal data, subject to whitelisting by the government.
- Enterprises must establish grievance redress mechanisms and enable user rights (e.g., access, correction, erasure).

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<sup>280</sup> Ministry of Law and Justice. *The Digital Personal Data Protection Act, 2023*. Act No. 22 of 2023, August 11, 2023.  
[https://prsindia.org/files/bills\\_acts/acts\\_parliament/2023/Digital\\_Personal\\_Data\\_Protection\\_Act\\_2023.pdf](https://prsindia.org/files/bills_acts/acts_parliament/2023/Digital_Personal_Data_Protection_Act_2023.pdf).

- Engagement with Consent Managers for managing user permissions if offering digital platforms in India.

### **Penalties:**

- Monetary penalties up to ₹250 crore (~\$29 million)<sup>281</sup> per instance for significant non-compliance.
- Specific fines for breaches like:
  - Failure to protect personal data,
  - Non-compliance with consent rules,
  - Breach of children's data obligations.
  - Blocking of non-compliant digital services possible under certain severe violations.

### **Evaluation:**

- **Status:** *Passed*
- **Severity:** *High*
  - Fines can reach up to \$29 million per violation, especially for data breaches and failure to comply with core obligations like consent and child data protection.
- **Enforcement Volatility:** *Medium*
  - Pending full implementation; enforcement mechanisms are being established.
- **Stage Classification:** *Post-Final Assembly*
  - Affects digital services, customer data handling, and platform compliance.

### **The Income-Tax Bill**<sup>282</sup>

The Income-tax Bill, 2025 was introduced in the Lok Sabha on February 13, 2025, by the Ministry of Finance. It seeks to replace the Income-tax Act, 1961, mainly to simplify the language, remove redundant provisions, and modernize the structure of India's income tax law, while retaining most of the substantive tax provisions currently in force. The Bill proposes no change in corporate or personal tax rates, penalty structures, or most definitions but introduces specific updates for virtual digital assets and expands search and seizure powers over digital spaces.

### **Scope:**

- All individual taxpayers and corporations operating in India, including foreign companies.
- Entities involved in virtual digital assets (cryptocurrencies, tokens).
- Companies engaged in transfer pricing or cross-border transactions.
- Non-resident companies and foreign enterprises with tax liabilities in India.

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<sup>281</sup> The conversion rate ₹1 = \$0.0117 was retrieved from Morningstar on April 17, 2025, at 7:19 PM UTC.

<sup>282</sup> Ministry of Finance, *The Income-tax Bill, 2025*, Bill No. 18 of 2025, introduced in Lok Sabha on February 12, 2025, [https://prsindia.org/files/bills\\_acts/bills\\_parliament/2025/The\\_Income-tax\\_Bill\\_2025.pdf](https://prsindia.org/files/bills_acts/bills_parliament/2025/The_Income-tax_Bill_2025.pdf).

**Timeline:**

- February 13, 2025: Bill introduced in Lok Sabha.

**Implications:**

- Corporate tax obligations remain largely the same as under the 1961 Act.
- Enterprises' India operations must monitor any administrative changes in faceless assessments, dispute resolution, and appeals.
- New definition of "undisclosed income" now includes virtual digital assets; Enterprises must ensure proper tax reporting if engaged in crypto/token-related transactions.
- Expanded search and seizure powers: Indian tax authorities can now access Enterprises' digital records (email servers, cloud accounts) during tax investigations if warranted.
- Dispute Resolution Panels (DRPs) for transfer pricing cases will remain, but must now provide points of determination and reasons for decisions, offering greater transparency.

**Penalties:**

- No major change in penalty structures from the existing Income-tax Act, 1961.
- Standard penalties for underreporting, misreporting, failure to deduct tax at source (TDS), or concealment of income continue to apply.
- Additional compliance burden for failure to disclose virtual digital assets properly.

**Evaluation:**

- **Status:** *Draft*
- **Severity:** *Medium*
  - While the Bill maintains existing penalty structures, it expands digital enforcement powers and introduces stricter reporting requirements for virtual digital assets. Non-disclosure or non-compliance could trigger significant audits, tax recovery actions, and reputational risks.
- **Enforcement Volatility:** *High*
  - Specific provisions, especially around digital asset taxation and procedural reforms, may evolve during the legislative process.
- **Stage Classification:** *Post-Final Assembly*
  - Impacts post-operational reporting and compliance with income tax obligations, especially for entities involved in crypto, cloud-based operations, and cross-border structuring.

**Draft AI Governance Guidelines<sup>283</sup>**

In response to the rapid growth of AI technologies and increasing concerns over ethical risks, the Ministry of Electronics and Information Technology (MeitY) issued the Draft AI Governance Guidelines to promote responsible AI development and safeguard digital trust. This draft

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<sup>283</sup> Ministry of Electronics and Information Technology, *Report on AI Governance Guidelines Development*, December 26, 2024, <https://indiaai.s3.ap-south-1.amazonaws.com/docs/subcommittee-report-dec26.pdf>.

supports India's broader Safe & Trusted AI initiative under the IndiaAI Mission, establishing standards around transparency, accountability, and risk mitigation for AI systems.

**Scope:**

- AI developers, deployers, service providers, cloud hosts.
- Applies to AI systems influencing legal, financial, healthcare, public safety outcomes, with a special focus on generative AI (LLMs, image/video generators).

**Timeline:**

- January 6, 2025: Draft released.
- Late 2025: Final guidelines expected after consultations.

**Implications:**

- Enterprises must implement AI transparency and accountability measures for India deployments.
- Watermarking or labeling may be required for AI-generated outputs.
- Mandatory risk assessments and incident reporting procedures are likely.
- Non-compliance may affect market access, government contract eligibility, and brand reputation.

**Penalties:**

- Penalties are expected to be defined under future binding legislation.
- The draft recommends regulatory actions such as:
  - Public disclosure of non-compliant entities.
  - Restriction or suspension of non-compliant AI systems in critical sectors.
  - Sanctions through relevant sector regulators (financial services, healthcare, defense).

**Evaluation:**

- **Status:** *Draft*
- **Severity:** *Medium*
  - While currently non-binding, the guidelines signal forthcoming regulatory expectations. Non-compliance could lead to reputational damage, exclusion from government contracts, or future sanctions once formalized.
- **Enforcement Volatility:** *High*
  - As a draft, the guidelines are subject to change. Final provisions may vary based on stakeholder feedback and policy developments.
- **Stage Classification:** *Post-Final Assembly*
  - Pertains to the deployment and operation of AI systems, especially those influencing critical sectors like finance, healthcare, and public safety.



## Appendix H. Mexico

### i) Current Regulations

#### 1. Environmental Protection & E-Waste Regulations

##### **General Law of Ecological Balance and Environmental Protection (LGEEPA)**<sup>284285</sup>

Effective since 2017 (with updated UMA values in 2023), Mexico's LGEEPA remains its foundational environmental law. A key amendment raised the maximum fine for violations from 50,000 to 7.5 million UMA (Unidad de Medida y Actualización)—a significant escalation designed to enforce corporate environmental accountability.

##### **Scope:**

The regulation applies to:

- All industrial, commercial, and infrastructure activities in Mexico that generate environmental impact (emissions, effluent, waste, deforestation, or land use change).
- Regulatory domains include air and water pollution, hazardous waste handling, biodiversity conservation, and compliance with environmental impact assessments (EIAs).
- Enforced by PROFEPA (Federal Attorney for Environmental Protection), through inspections, audits, and sanctions.

##### **Timeline:**

- 1988: LGEEPA enacted.
- 2017: Fine ceiling increased to 7.5 million UMA.

**Implications:** This regulation holds major relevance for Dell's manufacturing sites, contract assemblers, and logistics partners operating in Mexico. To align with Dell's traceability and sustainability commitments:

- Environmental Risk Screening: Dell should evaluate facilities and key suppliers for LGEEPA compliance risks, especially in high-impact regions.
- Audit & Certification Systems: Continuous monitoring of emissions, waste, and hazardous material handling will reduce enforcement exposure.
- Supplier Accountability: Dell should include LGEEPA-compliant clauses in contracts, and require immediate reporting of any environmental citations or investigations.

##### **Penalties:**

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<sup>284</sup> Mexico, *General Law of Ecological Balance and Environmental Protection*, translated by Global-Regulation, accessed May 16, 2025, <https://www.global-regulation.com/translation/mexico/560296/general-law-of-ecological-balance-and-environmental-protection.html>.

<sup>285</sup> Mexico, *General Law of Ecological Balance and Environmental Protection*, Climate Change Laws of the World, accessed May 16, 2025, [https://climate-laws.org/document/law-of-general-ecological-balance-and-protection-of-the-environment\\_7e1a](https://climate-laws.org/document/law-of-general-ecological-balance-and-protection-of-the-environment_7e1a).

- **Maximum Fine:** Up to 7.5 million UMA, equivalent to MXN 848.55 million, or approximately ~\$43.28 million USD as of April 17, 2025<sup>286</sup>. (2025 UMA Value: MXN 113.14/day<sup>287</sup>)

### Evaluation:

- **Status:** *Effective*
  - The law is fully operational and enforced across jurisdictions.
- **Severity:** *High*
  - Financial Penalty: Exceeds \$5 million USD, meeting the highest severity threshold.
  - Operational Impact: Risk of plant shutdowns, delayed permits, or costly remediation plans.
- **Enforcement Volatility:** *Low*
  - While procedures are well-established, regional enforcement may vary. However, high-risk sectors often see consistent scrutiny.
- **Stage Classification:** *Post Assembly*
  - LGEEPA targets production-stage and operational impacts (e.g., emissions, waste), rather than upstream sourcing—placing it in the Post-Final Assembly stage.

## 2. Cybersecurity Regulations

### Cybersecurity and Data Protection Law<sup>288,289</sup>

In response to escalating cyber threats and data breaches, Mexico City enacted a comprehensive cybersecurity and data protection law on March 21, 2025. This legislation mandates stringent cybersecurity measures and data protection protocols for organizations operating within the city.

### Scope:

The law applies to:

- Private companies, government agencies, and service providers operating within Mexico City.
- Organizations handling personal and sensitive personal data of individuals residing in Mexico City.

<sup>286</sup> 1 MXN = 0.051 USD (as of April 17, 7:21 PM UTC)

<sup>287</sup> David E. Leal González and Alondra Valdez Padilla, “Mexico: Increase to the UMA Value Announced for 2025,” Littler Mendelson P.C., January 13, 2025, <https://www.littler.com/publication-press/publication/mexico-increase-uma-value-announced-2025>.

<sup>288</sup> Enrique Espejel et al., “Mexico Enacts New Data Protection Regime,” White & Case LLP, March 27, 2025, <https://www.whitecase.com/insight-alert/mexico-enacts-new-data-protection-regime>.

<sup>289</sup> Guillermo Larrea, Federico de Noriega, Ana Rumualdo, and Victoria Villagómez, “Mexico’s New Federal Data Protection Law: What It Means for Companies,” Hogan Lovells, March 25, 2025, <https://www.hoganlovells.com/en/publications/mexicos-new-federal-data-protection-law-what-it-means-for-companies>.

Key requirements include:

- Implementation of Information Security Management Systems (ISMS).
- Mandatory data protection training for personnel.
- Notification of security breaches within 72 hours of detection.
- Adherence to principles of transparency, accountability, and data subject rights.

**Timeline:**

- Early 2025: Legislation introduced in response to a significant increase in cyber incidents, with over 200,000 cyber incidents reported in 2024.
- March 21, 2025: Law came into effect, marking Mexico City's commitment to enhancing cybersecurity and data protection.

**Implications:**

For Dell's operations and partnerships within Mexico City, compliance with this law necessitates:

- Assessment and enhancement of existing cybersecurity frameworks to align with the new ISMS requirements.
- Regular training programs for employees on data protection and cybersecurity best practices.
- Establishment of incident response protocols to ensure timely breach notifications.
- Review and update of data handling and privacy policies to ensure transparency and uphold data subject rights.

**Penalties:**

Non-compliance with the law can result in significant penalties:

- Administrative Fines: Ranging from 100 to 320,000 times the Mexico City daily minimum wage. With the 2025 minimum wage at MXN 248.93, fines can range from approximately MXN 24,893 to MXN 79.66 million (or USD 1,244 to USD 3.98 million).
- Enhanced Penalties: For violations involving sensitive personal data, fines can be doubled, reaching up to MXN 159.32 million (or USD 7.96 million).
- Criminal Penalties:
  - 3 months to 3 years imprisonment for individuals who, for profit, cause a security breach affecting databases under their custody.
  - 6 months to 5 years imprisonment for individuals who deceitfully process personal data to gain unlawful profit.
  - Penalties are doubled if sensitive personal data is involved.

**Evaluation:**

- **Status:** *Effective*
  - The law has been in force since March 21, 2025, with full applicability to entities operating within Mexico City.
- **Severity:** *High*
  - Financial Penalty: Fines can exceed USD 5 million, meeting the highest severity threshold.

- Legal Exposure: Potential for criminal liability and prosecution of responsible individuals.
- **Enforcement Volatility:** *Medium*
  - As a newly enacted law, enforcement practices are still evolving. Dell should anticipate potential changes in enforcement intensity and ensure proactive compliance measures.
- **Stage Classification:** *Post Assembly*
  - The law primarily affects operational processes, including data handling, cybersecurity measures, and incident response protocols, rather than upstream supply chain activities.

### 3. Forced Labor Prevention & Ethical Sourcing

#### **USMCA-Aligned Forced Labor Import Ban**<sup>290</sup>

Effective May 18, 2023, Mexico implemented a regulation aligned with the United States-Mexico-Canada Agreement (USMCA) that prohibits the importation of goods produced wholly or in part using forced or compulsory labor, including child labor. This measure reflects Mexico's commitment to ethical sourcing and the elimination of forced labor in global supply chains.

#### **Scope:**

The regulation applies to:

- Applies to all goods imported into Mexico, regardless of country of origin or sector, that are produced wholly or partially using forced or compulsory labor.
- Enforced by the Ministry of Labor and Social Welfare (STPS), which investigates labor practices either independently or in response to formal complaints.
- Goods confirmed to be produced with forced labor are listed publicly on the STPS website and denied entry into Mexico.

#### **Timeline:**

- February 17, 2023: Regulation published in Mexico's Official Gazette.
- May 18, 2023: Regulation becomes effective.

**Implications:** This regulation directly impacts Dell's supply chain operations, particularly in relation to its commitment to ethical sourcing and supply chain transparency. Dell's adherence to the Responsible Business Alliance (RBA) Code of Conduct necessitates:

- **Enhanced Traceability:** Implementing robust systems to trace labor conditions upstream to raw materials and component production stages.

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<sup>290</sup> José Hoyos-Robles and Eunkyung Kim Shin, "Mexico: The Implementation of United States-Mexico-Canada Agreement Forced Labor Import Ban," Baker McKenzie, February 22, 2023, <https://insightplus.bakermckenzie.com/bm/international-commercial-trade/mexico-the-implementation-of-united-states-mexico-canada-agreement-forced-labor-import-ban>.

- **Supplier Audits:** Conducting regular audits and risk assessments of suppliers, especially those in regions with known labor violations.
- **Documentation:** Maintaining comprehensive records demonstrating compliance with labor standards to preempt potential enforcement actions in Mexico.

**Penalties<sup>291</sup>:** Penalties for violating this prohibition can include withholding release of the goods, fines up to \$250,000, and potential forfeiture of the goods. The U.S. Customs and Border Protection (CBP) implements this prohibition through Withhold Release Orders (WROs) and other enforcement actions.

#### **Evaluation:**

- **Status:** *Effective*
  - The regulation has been in force since May 18, 2023, and applies to all goods imported into Mexico that are produced wholly or in part using forced or compulsory labor, including child labor.
- **Severity:** *Low*
  - This regulation qualifies as low severity because the maximum financial penalty for violations—based on similar enforcement practices under USMCA and comparable frameworks—is up to \$250,000, which fits the defined threshold for low severity ( $\leq$  \$500,000).
- **Enforcement Volatility:** *Medium*
  - The STPS has enforcement authority but limited precedents have been publicly documented, creating uncertainty about future implementation pace and thresholds. Dell must monitor enforcement trends and prepare for potential upticks in scrutiny.
- **Stage Classification:** *Post Assembly*
  - This policy affects finished goods entering Mexico and requires downstream verification that upstream labor conditions comply with anti-forced labor standards.

## **ii) Emerging Regulations**

### **1. Digital Financial Services Compliance**

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<sup>291</sup> U.S. Department of Labor, “Legal Compliance,” *Comply Chain*, accessed May 16, 2025, <https://www.dol.gov/agencies/ilab/comply-chain/why-develop-a-social-compliance-system/legal-compliance>.

## **Financial Technology Regulation – Fintech Law (Ley para Regular las Instituciones de Tecnología Financiera)<sup>292293</sup>**

Enacted in March 2018, Mexico’s Fintech Law creates a formal regulatory framework for financial technology institutions (FTIs), including crowdfunding platforms and electronic payment institutions. Its purpose is to foster innovation while safeguarding financial system integrity and protecting end users.

### **Scope:**

The regulation applies to:

- All companies offering financial services via digital platforms, such as peer-to-peer lending, crowdfunding, cryptocurrency exchanges, and electronic wallets.
- It regulates the authorization, operation, and supervision of these entities.
- Enforced by the National Banking and Securities Commission (CNBV), with oversight support from the Bank of Mexico and the Ministry of Finance and Public Credit.

### **Timeline:**

- March 2018: Law enacted.
- 2019–2023: Implementation progresses through secondary provisions and technical guidelines.
- 2024–2025: Provisions related to virtual assets, open banking, and sandbox testing environments are still being finalized and phased in.

### **Implications:**

Dell Technologies is leveraging fintech solutions within its supply chain to improve efficiency, security, and cost optimization. This includes integrating treasury technology, expanding supply chain financing programs, and adopting AI-powered data analytics. Dell Technologies actively partners with, invests in, and integrates with fintech firms, particularly through its investment arm, Dell Technologies Capital. While Dell is not a financial services provider, this regulation may apply if Dell partners with, invests in, or integrates with local fintech firms, including those involved in supply chain finance or digital banking.

To manage compliance risk, Dell can potentially consider:

- Assess regulatory standing of third-party financial platforms and service providers.
- Coordinate between legal, IT, and financial teams to ensure technology use aligns with CNBV standards.
- Ensure transparent data collection, AML (Anti-Money Laundering) practices, and user data protection.

### **Penalties:**

Violations of the Fintech Law can result in significant penalties, both administrative and criminal:

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<sup>292</sup> Comisión Nacional Bancaria y de Valores, “*El Congreso de la Unión aprueba Ley para Regular las Instituciones de Tecnología Financiera*,” 2 de marzo de 2018, <https://www.gob.mx/cnbv/articulos/el-congreso-de-la-union-aprueba-ley-para-regular-las-instituciones-de-tecnologia-financiera>.

<sup>293</sup> Basham, Ringe y Correa, S.C., “*Ley Fintech*,” consultado el 16 de mayo de 2025, <https://basham.com.mx/servicios/ley-fintech/>.

- **Administrative Fines:** Entities operating without proper authorization or failing to comply with regulatory requirements may face fines ranging from 1,000 to 150,000 UMA (Units of Measurement and Update). Given the 2025 UMA value of MXN 113.14, this equates to fines between approximately MXN 113,140 and MXN 16.97 million (or USD 5,770 to USD 848,500).
- **Criminal Penalties:** Severe infractions, such as unauthorized operations, mismanagement of client funds, or dissemination of false information, can lead to imprisonment ranging from two to fifteen years, depending on the nature and gravity of the offense.

#### **Evaluation:**

- **Status:** *Partially Effective*
  - While the Fintech Law was enacted in 2018, certain provisions, especially those concerning virtual assets and new financial models, are still in the process of full implementation.
- **Severity:** *Medium*
  - The maximum administrative fine of USD 848,500 falls within the \$500,001 – \$5 million range, aligning with the medium severity classification.
- **Enforcement Volatility:** *Low*
  - Enforcement by the National Banking and Securities Commission (CNBV) has been consistent, with clear guidelines and procedures in place.
- **Stage Classification:** *Post Assembly*
  - This regulation primarily affects digital product offerings and customer-facing financial technology implementations, rather than upstream production or sourcing.

## **2. Data Privacy Compliance**

### **Federal Law on the Protection of Personal Data Held by Private Parties (LFPDPPP)<sup>294295</sup>**

Enacted on March 21, 2025, Mexico's updated Federal Law on the Protection of Personal Data Held by Private Parties (LFPDPPP) replaces the 2010 version. This revision aligns with the constitutional reform dissolving the National Institute of Transparency, Access to Information, and Protection of Personal Data (INAI), transferring its functions to the Secretariat of Anti-Corruption and Good Governance (SABG).

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<sup>294</sup> Guillermo Larrea, Ana Rumualdo, and Victoria Villagómez, "Mexico's New Federal Data Protection Law: What It Means for Companies," Hogan Lovells, March 25, 2025, <https://www.hoganlovells.com/en/publications/mexicos-new-federal-data-protection-law-what-it-means-for-companies>.

<sup>295</sup> Carlos Vela-Trevino, Daniel Villanueva-Plasencia, and Paulina Bojalil, "Mexico: From 2010 to 2025 – Evolution of the New Federal Law on the Protection of Personal Data Held by Private Parties," Baker McKenzie InsightPlus, April 2, 2025, <https://insightplus.bakermckenzie.com/bm/data-technology/mexico-from-2010-to-2025-evolution-of-the-new-federal-law-on-the-protection-of-personal-data-held-by-private-parties>.

**Scope:**

The updated LFPDPPP applies to:

- All private entities processing personal data within Mexico.
- Activities involving the collection, use, disclosure, or storage of personal data, regardless of the medium.

Key provisions include:

- Enhanced definitions of personal data, emphasizing the protection of sensitive data.
- Obligations for data controllers to implement security measures and obtain explicit consent for data processing.
- Rights for individuals to access, rectify, cancel, or oppose the processing of their personal data (ARCO rights).

**Timeline:**

- March 20, 2025: Decree published in the Official Gazette.
- March 21, 2025: Law comes into effect.
- Within 90 days: Suspension period for proceedings under the former INAI's responsibility, except for information requests via the National Transparency Platform.

**Implications:**

For companies like Dell operating in Mexico, the updated LFPDPPP necessitates:

- Reviewing and updating privacy notices to align with new definitions and consent requirements.
- Implementing or enhancing data protection policies and security measures.
- Ensuring mechanisms are in place to address ARCO rights requests promptly.
- Training staff on the new obligations and procedures under the updated law.

**Penalties:**

Non-compliance with the LFPDPPP can result in significant penalties:

- Administrative Fines: Ranging from 100 to 320,000 times the Unit of Measurement and Update (UMA). With the 2025 UMA value at MXN 113.14, fines can range from approximately MXN 11,314 to MXN 36.2 million (USD 565 to USD 1.81 million).
- Enhanced Penalties: Fines can be doubled if violations involve sensitive personal data, potentially reaching MXN 72.4 million (USD 3.62 million).
- Criminal Penalties: Imprisonment ranging from three months to five years for serious offenses, such as unauthorized profit-driven data processing or breaches involving sensitive data.

**Evaluation:**

- **Status:** *Partially Effective*
  - While the law is in effect, certain transitional provisions and the establishment of specialized courts are pending, affecting full implementation.
- **Severity:** *Medium*
  - The maximum administrative fine of USD 3.62 million falls within the \$500,001 – \$5 million range, aligning with the medium severity classification.
- **Enforcement Volatility:** *Medium*



- The transition from INAI to SABG introduces uncertainties in enforcement practices and consistency.
- **Stage Classification: Post Assembly**
  - The regulation primarily impacts operational processes related to data handling and protection, rather than upstream supply chain activities.

## Appendix I. Japan

### i) Current Regulations

#### **Japanese Economic Security Promotion Act (ESPA)**

Japan's Economic Security Promotion Act (ESPA) establishes a strategic framework aimed at protecting the country's economic interests from growing geopolitical threats and reinforcing national security. The legislation empowers the government to strengthen and secure supply chains for vital materials, underscoring heightened awareness of vulnerabilities in global sourcing. As Japan accelerates investments in critical fields such as quantum computing, artificial intelligence, biotechnology, and defense technologies, ESPA enables authorities to screen foreign investments and monitor research collaborations to prevent technological leakage and foreign exploitation.<sup>296</sup> The act also reflects Japan's response to intensifying regional tensions, particularly those involving China's expanding economic and technological influence, as well as rising concerns over Taiwan and North Korea.<sup>297</sup> By targeting key sectors including

<sup>296</sup> Aoyama, Hiroyuki, and Kosuke Shibata. "Japan's Economic Security Promotion Act." *Law.asia*, July 18, 2022.

<https://law.asia/japan-economic-security-promotion-act/#:~:text=The%20act%20provides%20for%20support%20to%20national%20and%20public%20security.>

<sup>297</sup> Cabinet Secretariat of Japan. *Act on the Promotion of Ensuring National Security through Integrated Implementation of Economic Measures*. Act No. 43 of 2022. Promulgated May 18, 2022.

<https://www.japaneselawtranslation.go.jp/en/laws/view/4523/en>

semiconductors, rare earths, pharmaceuticals, and cybersecurity infrastructure, the law helps Japan reduce strategic reliance on external actors and bolster its resilience against external economic coercion.

#### **Scope<sup>298</sup>:**

- Semiconductors and pharmaceuticals
- Rare Earth Elements such as : neodymium, praseodymium, terbium
- Lithium and Cobalt
- Printed circuit boards (PCBs) and memory chips (DRAM, NAND flash memory)
- Servers, storage systems, and cloud computing infrastructure
- Quantum computing and Artificial Intelligence (AI)

#### **Timeline<sup>299</sup>:**

- **Early 2021:** Initial discussions and draft of the Economic Security Promotion Act.
- **October 2021:** Officially unveiled a draft of the Economic Security Promotion Act to the public.
- **May 11, 2022:** Official enactment of Economic Security Promotion Act.<sup>300</sup>
- **June - July 2022:** Early steps to implement the Act, with guidelines for businesses to ensure compliance.
- **January 2023:** Ongoing adjustments and expansion of focus on critical infrastructure and technology security.
- **2024:** Full implementation, with heightened regulatory scrutiny and enforcement.

#### **Implications :**

- Stringent requirements regarding the transfer of sensitive technologies or intellectual property (IP) to Japanese entities or subsidiaries are implied. If Dell's products or technology fall under categories designated as crucial for national security, it may need to obtain government approval for certain transactions.<sup>301</sup>
- Seek approval if Dell is looking to increase its investment in certain sectors, like defense or high-tech manufacturing, or if a foreign investor is interested in investing in its operations.

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<sup>298</sup> Nishimura, Rintaro. "Japan Would Benefit from an Economic Security Strategy." *The Interpreter*, Lowy Institute, October 23, 2024.

<https://www.lowyinstitute.org/the-interpreter/japan-would-benefit-economic-security-strategy>

<sup>299</sup> Japan's Economic Security Promotion Act and the Implications for Businesses. *Strategic Comments* 28, no. 32, 2022.

<https://www.iiss.org/publications/strategic-comments/2022/japans-economic-security-promotion-act-and-the-implications-for-businesses/>.

<sup>300</sup> European Parliamentary Research Service (EPRS). *The EU Conflict Minerals Regulation: Implementation and Impact*. EPRS Study, July 2023.

[https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/751417/EPRS\\_ATAG\(2023\)751417\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/751417/EPRS_ATAG(2023)751417_EN.pdf)

<sup>301</sup> Council on Foreign Relations (CFR). "Japan's Economic Security Promotion Act (ESPA): Summary." [https://www.cfr.org/sites/default/files/pdf/economic%20security%20promotion%20act%20%28summary%29%28English%29.pdf?utm\\_source=sendupdatelogo](https://www.cfr.org/sites/default/files/pdf/economic%20security%20promotion%20act%20%28summary%29%28English%29.pdf?utm_source=sendupdatelogo)

- Ensuring adherence to new security and investment laws may require additional resources, legal teams, and operational adjustments, resulting in higher compliance costs.

#### **Penalties <sup>302</sup>:**

- Fines for Non-Compliance
  - Companies could be fined substantial amounts (potentially in the millions of yen), depending on the severity of the violation.
- Suspension of Business Operations which will harm business continuity and reputation.
- Legal Action and Penalties for False Reporting
  - Penalties can include civil lawsuits, additional fines, or other enforcement actions designed to hold companies accountable for false or incomplete disclosures.
- Asset freezes or forced divestments.
- Revocation of licenses or permits.
- Criminal liability (including imprisonment for individuals).
- Reputational damage, leading to long-term business consequences.

#### **Evaluation :**

- **Status:** *Effective*
- **Severity:** *High*
  - Violations could result in substantial fines, disruptions in business, or even criminal charges. This makes the law's severity particularly high for companies involved in critical infrastructure or technologies.
- **Enforcement Volatility:** *Medium to High*
  - Enforcement is likely to be somewhat volatile at the start, as businesses and the government adapt to the provisions of JESPA. The frequency of enforcement actions would increase as the Japanese government tightens control over technology transfers and foreign investments in critical sectors.<sup>303</sup>
- **Stage Classification:** *Pre Final Assembly*

### **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) is a major multilateral trade pact comprising 11 nations across the Asia-Pacific region, including Japan, Canada, Australia, Vietnam, Mexico, New Zealand, Singapore, Chile, Brunei, Malaysia, and Peru. It aims to (1) promote free trade by reducing tariffs, (2) facilitating cross-border

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<sup>302</sup> Kyodo News. "Japan's Diet Enacts Law to Create Economic Security Clearance System." May 2024. <https://english.kyodonews.net/news/2024/05/6d180e81198e-japans-diet-enacts-law-to-create-economic-security-clearance-system.html>

<sup>303</sup> Tokyo Foundation for Policy Research. *How Will the Economic Security Law Change Japan's Sci-Tech Policy?* May 9, 2023. Accessed May 15, 2025. <https://www.tokyofoundation.org/research/detail.php?id=943>.

investments, and (3) standardizing regulations across member countries.<sup>304</sup> The CPTPP is the successor to the Trans-Pacific Partnership (TPP) after the United States' withdrawal in 2017, but it remains a powerful force for global trade, particularly in Asia-Pacific. In Japan, the CPTPP plays a central role in the nation's trade strategy, supporting its ambition to maintain a leading economic position in the Asia-Pacific region. Beyond advancing free trade, the agreement establishes robust frameworks for intellectual property rights, investment regulations, environmental standards, and digital commerce.

#### Scope:

- Elimination or reduction of tariffs on: Automobiles, Electronics, Agriculture, and Consumer goods
- Liberalization of services sectors, including financial services, telecommunications, logistics, and professional services.

#### Timeline<sup>305</sup>:

- **October 5, 2015** – Original Trans-Pacific Partnership (TPP) agreement was reached by 12 countries, including the U.S.
- **January 2017** – The United States withdrew from the TPP under President Trump.
- **March 8, 2018** – The remaining 11 countries signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in Santiago, Chile. The agreement retained most of the TPP's provisions but suspended 22 clauses, primarily those pushed by the U.S.
- **December 30, 2018** – CPTPP entered into force for the first six ratifying countries:
  - Japan
  - Canada
  - Australia
  - Mexico
  - New Zealand
  - Singapore
- **2019–2021** – Additional members joined as the agreement entered into force for:
  - Vietnam (January 14, 2019)
  - Peru (September 19, 2021)
  - Malaysia (November 29, 2022)
  - Chile (February 21, 2023)
  - Brunei (July 12, 2023)
- **2021–Present** –Ongoing Expansion
  - United Kingdom (formal accession agreement signed in July 2023; full entry expected in 2024–25)

<sup>304</sup> Grace Jaramillo. *The CPTPP: A Key Strategic Advantage for Japan to Advance Its Leadership in the Pacific*. Vancouver: School of Public Policy and Global Affairs, University of British Columbia, July 2020. [https://sppga.ubc.ca/wp-content/uploads/sites/5/2020/07/Jaramillo\\_The-CPTPP-Japan-Grace-Jaramillo.pdf](https://sppga.ubc.ca/wp-content/uploads/sites/5/2020/07/Jaramillo_The-CPTPP-Japan-Grace-Jaramillo.pdf).

<sup>305</sup> Ministry of Foreign Affairs of Japan. "Legal Matters." Accessed May 15, 2025. [https://www.mofa.go.jp/ecm/ep/page25e\\_000266.html](https://www.mofa.go.jp/ecm/ep/page25e_000266.html).

### **Implications :**

With the CPTPP targeting tariff reductions across key sectors such as automobiles, electronics, agriculture, and consumer goods, Dell stands to gain from more cost-effective access to Asia-Pacific markets for its computers and technology components. A notable feature of the agreement is its progressive approach to digital trade, particularly the facilitation of cross-border data flows which is crucial for Dell's cloud operations and global IT infrastructure management.<sup>306</sup> By prohibiting data localization mandates, the CPTPP enables smoother data transfer and storage across member states. To fully leverage these advantages, Dell will need to:

- Align its practices with new customs and product safety regulations harmonized under the CPTPP by ensuring that their compliance programs and logistics operations are adaptable to meet cross-border regulatory standards.
- Stay updated on the environmental provisions (stricter emission standards, sustainable sourcing mandates, and recycling requirements) under the CPTPP, which may affect the way Dell operates within Japan and the Asia-Pacific region.

**Penalties :** The CPTPP does not levy conventional penalties such as fines on individual companies as national regulations might. Instead, its enforcement relies on state-to-state dispute resolution mechanisms, meaning that any penalties or corrective actions are directed between governments, rather than imposed directly on private-sector entities<sup>307</sup>.

- Face delays, increased tariffs, or customs complications, if a country violates trade rules
- Reputational Impact
- Operational consequences

### **Evaluation :**

- **Status:** *Effective*
- **Severity:** *Medium*
  - Non-compliance or trade disruptions could have moderate impacts on Dell's supply chain, component sourcing, and data handling across the Asia-Pacific region.
- **Enforcement Volatility:** *Low to Medium*
  - Enforcement under the CPTPP is primarily managed through stable, intergovernmental mechanisms. However, enforcement volatility could rise in the event of trade disputes among member nations or heightened geopolitical tensions, particularly those involving digital trade, intellectual property, or cybersecurity<sup>308</sup>.
- **Stage Classification:** *Pre Final Assembly*

### **Japan-U.S. Digital Trade Agreement**

<sup>306</sup> International Trade Administration. "Japan - Trade Agreements." Last modified April 2024. <https://www.trade.gov/country-commercial-guides/japan-trade-agreements>.

<sup>307</sup> Department for Business and Trade. "CPTPP Rules of Origin in Japan." *Great.gov.uk*. Accessed May 15, 2025. <https://www.great.gov.uk/markets/japan/trade-agreement/cptpp-rules-of-origin-in-japan/>.

<sup>308</sup> WTO Center. "Cost-Benefit Analysis of Japan's Decision to Join CPTPP." Accessed May 15, 2025. <https://wtocenter.vn/chuyen-de/11881-cost-benefit-analysis-of-japans-decision-to-join-cptpp>.

The Japan–U.S. Digital Trade Agreement is a landmark bilateral agreement aimed at promoting open digital trade and setting high-standard rules for the digital economy. It builds on principles found in the U.S.–Mexico–Canada Agreement (USMCA) and reflects both countries' shared interest in maintaining a free, secure, and fair digital environment. It covers a wide range of digital economy areas and establishes comprehensive, high-standard rules that go beyond traditional trade agreements. Its scope is designed to (1) **promote innovation**, (2) **enhance cross-border digital flows**, and (3) **protect digital rights**, while maintaining regulatory autonomy<sup>309</sup>.

#### Scope<sup>310</sup>:

- Software downloads
- E-books and digital media
- Streaming services (music, video, games)
- Cloud-based services and apps
- Data analytics and AI services

#### Timeline<sup>311</sup>:

- **September 25, 2019** – Announcement of Agreement in Principle.
- **October 7, 2019** – Officially signed by then-U.S. Trade Representative Robert Lighthizer and Japan's Foreign Minister Toshimitsu Motegi.
- **December 2019** – Ratification by Japanese Diet.
- **January 1, 2020** – The digital trade agreement officially came into effect.

#### Implications:

- Dell can deliver cloud services, customer support, analytics, and IT operations without being required to store data within Japan, thereby lowering infrastructure expenses and streamlining operations.
- By enhancing scalability and operational efficiency, Dell can centralize data management across its global infrastructure, removing the need to duplicate systems in Japan<sup>312</sup>.

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<sup>309</sup> United States Trade Representative. *U.S.-Japan Digital Trade Agreement Text*. October 7, 2019. <https://ustr.gov/countries-regions/japan-korea-apec/japan/us-japan-trade-agreement-negotiations/us-japan-digital-trade-agreement-text>.

<sup>310</sup> David G. Litt and A. Reid Monroe-Sheridan. "The US-Japan Digital Trade Agreement and 'Data Free Flow with Trust.'" *U.S.-Asia Law Institute*, February 3, 2022. <https://usali.org/usali-perspectives-blog/the-us-japan-digital-trade-agreement-and-data-free-flow-with-trust>.

<sup>311</sup> Office of the United States Trade Representative. "U.S.-Japan Trade Agreement Negotiations." Last modified January 1, 2020. <https://ustr.gov/countries-regions/japan-korea-apec/japan/us-japan-trade-agreement-negotiations#:~:text=Negotiations%20started%20in%20April%202019,force%20on%20January%201%2C%202020>.

<sup>312</sup> U.S. Congressional Research Service. *U.S.-Japan Trade Agreements and Negotiations*. Report IF11120. Washington, DC: Congressional Research Service, 2024. <https://crsreports.congress.gov/product/pdf/IF/IF11120>.

- Enhances the protection of Dell's intellectual property, including proprietary software, device firmware, and enterprise solutions, which is vital for maintaining competitiveness and ensuring security<sup>313</sup>.

#### **Penalties<sup>314</sup>:**

- No Direct Corporate Penalties
  - Companies like Dell are not fined under the agreement itself. Instead, they must comply with domestic laws in each country (e.g., Japan's APPI or the U.S.'s sector-specific data regulations).
- Non-compliance with those national laws can result in fines, license suspensions, or other domestic penalties
- If Japan or the U.S. believes the other party is breaching the agreement such as by enforcing unjustified data localization measures, they can initiate formal dispute resolution procedures.
  - This process may include consultations, efforts at mediation, and, if necessary, a panel ruling.
- Penalties take the form of retaliatory trade actions such as tariffs or the suspension of specific obligations enforced between governments rather than imposed directly on individual companies.

#### **Evaluation:**

- **Status:** *Effective*
- **Severity:** *Low*
- **Enforcement Volatility:** *Low to Medium*
  - While both countries maintain a strong commitment to digital openness, evolving national policies such as changes in cybersecurity frameworks or updates to privacy regulations (e.g., U.S. executive orders or amendments to Japan's data protection laws) could influence how the agreement is practically enforced<sup>315</sup>.
- **Stage Classification:** *Pre Final Assembly*

#### **Japan-EU Economic Partnership Agreement (EPA)**

The Japan-EU Economic Partnership Agreement (EPA) is one of the world's most comprehensive free trade agreements, covering a wide range of economic activities and regulatory areas. It directly impacts the flow of goods, services, investments, and digital data between Japan and the European Union. The agreement aims to (1) boost trade and investment

<sup>313</sup> Office of the United States Trade Representative. "Fact Sheet on U.S.-Japan Digital Trade Agreement." October 7, 2019.

<https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2019/october/fact-sheet-us-japan-digital-trade-agreement>.

<sup>314</sup> U.S. Department of Commerce, International Trade Administration. "Japan - Market Challenges." Last modified January 2, 2024. <https://www.trade.gov/country-commercial-guides/japan-market-challenges>.

<sup>315</sup> Mayer Brown LLP. "US-Japan Trade Agreements Mark 'First Stage' of Tariff Cuts and Commitments on Digital Trade." October 28, 2019.

<https://www.mayerbrown.com/-/media/files/perspectives-events/publications/2019/10/usjapan-agreement--summary.pdf>.



flows between the two regions, (2) reduce trade barriers, and (3) foster closer economic ties<sup>316</sup>. The agreement eliminates or reduces tariffs on a wide range of goods, including agricultural products, industrial goods, automobiles, electronics, and technology products. For example, Japan eliminates tariffs on cheese, wine, and machinery, while the EU removes tariffs on automobiles and electronics<sup>317</sup>.

#### **Scope<sup>318</sup>:**

- Technology & Electronics
- Automotive
- Industrial Equipment
- Agricultural Products
- Pharmaceutical
- Textiles & Apparel
- Digital Services
- IP- Intensive Goods

#### **Timeline:**

- **2013:** Japan and the EU started exploring the possibility of a trade agreement.
- **2017:** Formal negotiations for the Japan-EU EPA began and concluded by July 2017 after 18 rounds of talks.
- **July 2018:** The final agreement was signed in Tokyo, Japan, by EU Commission President Jean-Claude Juncker and Japanese Prime Minister Shinzo Abe.
- **February 1, 2019:** The Japan-EU Economic Partnership Agreement (EPA) took effect after both Japan and the European Union finalized their respective ratification procedures.
- **Ongoing developments:** Subject to ongoing implementation and refinement through annual review meetings, where both parties evaluate its effectiveness and identify areas for enhanced collaboration. Particular focus is given to evolving provisions related to digital trade, data protection, and e-commerce, which are continuously being updated to reflect technological and regulatory developments<sup>319</sup>.

#### **Implications :**

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<sup>316</sup> European Commission. "EU-Japan Economic Partnership Agreement." Last modified February 1, 2019. Accessed May 15, 2025.

[https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/japan/eu-japan-agreement\\_en](https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/japan/eu-japan-agreement_en).

<sup>317</sup> Ministry of Foreign Affairs of Japan. "Japan-EU Economic Partnership Agreement (EPA)." Last modified July 30, 2024. [https://www.mofa.go.jp/policy/economy/page6e\\_000013.html](https://www.mofa.go.jp/policy/economy/page6e_000013.html).

<sup>318</sup> Ministry of Foreign Affairs of Japan. *Japan-EU Economic Partnership Agreement (EPA)*. June 2024. <https://www.mofa.go.jp/files/000013835.pdf>.

<sup>319</sup> Sapir, André, Alessio Terzi, and Sonali Chowdhry. *The EU–Japan Economic Partnership Agreement*. Bruegel, October 3, 2018. <https://www.bruegel.org/report/eu-japan-economic-partnership-agreement>.



- The elimination of tariffs on technology products lowers the cost of importing components into Japan and exporting finished goods to the EU, enhancing both price competitiveness and overall supply chain efficiency.
- The mutual recognition of technical regulations and conformity assessments simplifies the process of ensuring product compliance in both markets, reducing administrative and certification burdens. This is particularly beneficial for products such as servers, laptops, and peripheral devices<sup>320</sup>.
- The opening of Japan's public procurement markets to EU companies, and vice versa, creates expanded opportunities for Dell in securing public sector IT contracts, particularly in supplying hardware, software, and managed services across education, healthcare, and government sectors<sup>321</sup>.
- The emphasis on sustainability and responsible sourcing practices aligns with Dell's ESG commitments. However, it may also necessitate more rigorous supplier audits, increased material transparency, and sustainability disclosures across both regions.

### **Penalties<sup>322</sup> :**

The Japan-EU Economic Partnership Agreement (EPA) does not impose direct penalties on individual companies like national laws do. Instead, enforcement operates primarily through state-to-state mechanisms.

- Complexity in meeting rules of origin can affect eligibility for tariff benefits.
- Non-compliance such as incorrect origin documentation can result in customs duties being re-applied, fines under local trade laws, shipment delays, or revocation of EPA benefits.
- Failure to adhere to EPA protocols may lead to customs delays or disqualification from preferential treatment.

### **Evaluation :**

- **Status:** *Effective*
- **Severity:** *Medium*
  - While the agreement is designed to facilitate trade, companies are required to adhere to stringent rules of origin, intellectual property regulations, and digital trade provisions. Non-compliance may lead to forfeiture of benefits such as reduced or eliminated tariffs<sup>323</sup>.

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<sup>320</sup> European Commission. "EU-Japan Agreement." *EU Trade*.  
[https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/japan/eu-japan-agreement\\_en](https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/japan/eu-japan-agreement_en).

<sup>321</sup> EU-Japan Centre for Industrial Cooperation. "About the EU-Japan EPA."  
<https://www.eu-japan.eu/eubusinessinJapan/procedures/economic-partnership-agreement/about-eu-japan-epa>.

<sup>322</sup> European Commission. "EU-Japan Economic Partnership Agreement." *Access2Markets*.  
<https://trade.ec.europa.eu/access-to-markets/en/content/eu-japan-economic-partnership-agreement>.

<sup>323</sup> González, Miguel Otero-Iglesias. "The EU–Japan Economic Partnership Agreement and the Revitalisation of the International Economic Liberal Order." *Real Instituto Elcano*, March 7, 2019.  
<https://www.realinstitutoelcano.org/en/analyses/the-eu-japan-economic-partnership-agreement-and-the-revitalisation-of-the-international-economic-liberal-order/>.

- **Enforcement Volatility:** *Low to Medium*
  - Enforcement mechanisms are treaty-based and relatively stable. However, volatility could rise with changes in political leadership, climate policy divergence, or digital sovereignty debates.
- **Stage Classification:** *Pre Final Assembly*

### **Act on the Protection of Personal Information (APPI)**

Japan's Act on the Protection of Personal Information (APPI) is the country's primary privacy legislation, overseen and enforced by the Personal Information Protection Commission (PPC). It regulates how personal data is collected, used, stored, and transferred by private businesses, public agencies, and other organizations. APPI shares many core principles with the European Union's General Data Protection Regulation (GDPR) including requirements for user consent, cross-border data transfer restrictions, and obligations to report data breaches—placing it within the global framework of robust data protection standards<sup>324</sup>. In an effort to streamline international data flows, Japan amended APPI to more closely mirror GDPR requirements, which enabled the establishment of a mutual adequacy agreement between Japan and the EU<sup>325</sup>. This agreement permits the unrestricted transfer of personal data between the two regions while upholding high levels of privacy protection. As Japan pursues a more connected and digitally advanced society through initiatives like Society 5.0, APPI serves as a legal cornerstone, ensuring that innovation in sectors like healthcare, finance, and smart infrastructure is balanced with strong privacy safeguards and responsible data governance<sup>326</sup>.

### **Scope<sup>327</sup>:**

- Businesses (including) foreign companies handling the personal data of individuals.
- Domestic and cross-border data processing.

### **Timeline<sup>328</sup>:**

- **2003:** Original APPI enacted.
- **2015:** Major amendments passed.
- **2017:** Amendments took effect.
- **2020:** Key updates announced for enforcement.
- **April 1, 2022:** Latest amendments took effect.
- **2023 - 2025 (Ongoing):** Global Alignment & drafting of future guidelines.

<sup>324</sup> DLA Piper. "Data Protection Laws in Japan." <https://www.dlapiperdataprotection.com/?t=law&c=JP>

<sup>325</sup> Amazon Web Services. "Japan Data Privacy." Last modified 2025. Accessed May 15, 2025. <https://aws.amazon.com/compliance/japan-data-privacy/>.

<sup>326</sup> Didomi. "Japan Data Protection Law (APPI): Everything You Need to Know." *Didomi*, February 17, 2023. <https://www.didomi.io/blog/japan-data-protection-law-appi-everything-you-need-to-know>.

<sup>327</sup> Finite State. "Japan's Act on the Protection of Personal Information." *Finite State*, July 22, 2024. Accessed May 15, 2025. <https://finitestate.io/regulatory-compliance/japan-appi>.

<sup>328</sup> Cabinet Secretariat of Japan. *The Act on the Protection of Personal Information (APPI)*. 2024. <https://www.cas.go.jp/jp/seisaku/hourei/data/APPI.pdf>

### Implications<sup>329</sup> :

- Identify personal data collected from Japanese users and customers.
- Localize privacy policies, data handling practices and contracts with Japanese and Global suppliers.
- Implement incident response systems in Japan to meet breach reporting deadlines.
- Supply chain partners (cloud providers, logistics, IT services) also need to be APPI-compliant.
- APPI impacts product design such as data-collecting devices, support tools, especially when tied to AI, IoT, or cloud services.
- Inform users about the country where data is going, how it will be protected, and the existence of any relevant laws in the recipient country.<sup>330</sup>

### Penalties<sup>331</sup>: Regulated by the Personal Information Protection Commission (PPC)

- Administrative guidance and orders
- Public naming and shaming
- Fines: Up to ¥100 million (~\$750,000) for corporations
- Risks of lawsuits and reputational damage

### Evaluation:

- **Status:** Effective
- **Severity:** High
  - Violations can lead to reputational damage for non compliance, fines up to ¥100 million (approx. \$750,000) for corporations, and criminal penalties in cases of intentional data mishandling.
- **Enforcement Volatility:** Medium
  - Since the 2022 amendments, PPC has adopted a more assertive enforcement approach, issuing formal directives and publicly disclosing violations. As cybersecurity threats escalate and public expectations for data protection intensify for multinational companies, regulatory volatility is likely to rise<sup>332</sup>.
- **Stage Classification<sup>333</sup>:** Pre Assembly & Post Assembly, applies across Dell's product lifecycle
  - **Pre-Assembly:** APPI applies to data collected during product/service design, marketing, app development, and cloud infrastructure deployment.

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<sup>329</sup> PrivacyEngine. "Japan's APPI Data Protection Law." Accessed May 15, 2025.

<https://www.privacyengine.io/blog/japans-appi-data-protection-law/>.

<sup>330</sup> Usercentrics. "Japan: Act on the Protection of Personal Privacy (APPI)." Accessed May 11, 2024.

<https://usercentrics.com/knowledge-hub/japan-act-on-protection-of-personal-privacy-appi/>

<sup>331</sup> Perforce Software. "The Japan APPI (Act on the Protection of Personal Information) Explained." *Perforce Blog*, January 1,

2021.<https://www.perforce.com/blog/pdx/japan-appi-act-protection-of-personal-information>.

<sup>332</sup> Endpoint Protector. "Data Protection in Japan: APPI." May 11, 2024.

<https://www.endpointprotector.com/blog/data-protection-in-japan-appi/>

<sup>333</sup> Tanaka, Hiroyuki, and Kohei Shiozaki. "Japan's DPA Publishes Interim Summary of Amendments to Data Protection Regulations." *International Association of Privacy Professionals (IAPP)*, July 11, 2024. <https://iapp.org/news/a/japan-s-dpa-publishes-interim-summary-of-amendments-to-data-protection-regulations>.

- **Post-Assembly:** Applies to usage, maintenance, tech support, cross-border services, and data analytics done after deployment.

### **Digital Platform Transparency Act**

The Digital Platform Transparency Act (DPTA) formally titled the Act on Improving Transparency and Fairness of Digital Platforms took effect as part of Japan's broader initiative to regulate dominant digital intermediaries and foster fair competition in the digital economy.<sup>334</sup> The legislation aims to enhance transparency, fairness, and accountability in the business practices of major online platforms, especially those acting as gatekeepers in e-commerce and app distribution. It was introduced by Japan's Ministry of Economy, Trade and Industry (METI) in response to growing concerns over (1) platform dominance, (2) opaque algorithms and data use and (3) unfair treatment of business users.<sup>335</sup> As of now, companies such as Amazon, Rakuten, Apple, and Google fall under its purview.<sup>336</sup> However, its principles extend to any digital service provider operating at scale, meaning that companies like Dell, which maintain partner ecosystems, e-commerce platforms, or app services in Japan, should monitor this law closely.

#### **Scope:**

- E-commerce marketplaces
- App stores
- Specified Digital Platform Providers

#### **Timeline<sup>337</sup>:**

- **February 18, 2020** – Bill Introduction
- **May 27, 2020** – Enactment by the National Diet
- **January 26, 2021** – Cabinet Order Issuance
  - Article 4, Paragraph 1 of the DPTA, setting the stage for its enforcement
- **April 1, 2021** – Designation of Specified Digital Platform Providers
- **October 3, 2022** – Expansion to Digital Advertising Platforms
- **February 2, 2024** – Publication of Evaluation Report

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<sup>334</sup> Ministry of Economy, Trade and Industry. *Act on Improving Transparency and Fairness of Digital Platforms*. Translated by the Ministry of Justice. Accessed May 15, 2025. <https://www.japaneselawtranslation.go.jp/en/laws/view/4532/en>.

<sup>335</sup> Ministry of Economy, Trade and Industry (METI). *Digital Platforms*. Accessed May 15, 2025. [https://www.meti.go.jp/english/policy/mono\\_info\\_service/information\\_economy/digital\\_platforms/index.html](https://www.meti.go.jp/english/policy/mono_info_service/information_economy/digital_platforms/index.html).

<sup>336</sup> MLex. "Japan's Digital Transparency Bill to Require Big Tech Companies to Report Annually to Industry Minister." Last modified 2025. Accessed May 15, 2025. <https://www.mlex.com/mlex/articles/1901135/japan-s-digital-transparency-bill-to-require-big-tech-companies-to-report-annually-to-industry-minister>.

<sup>337</sup> Digital Policy Alert. "Japan: Act on Improving Transparency and Fairness in Trading on Specified Digital Platforms (Act No. 38 of 2020)." Last modified February 1, 2021. Accessed May 15, 2025. <https://digitalpolicyalert.org/change/20>.

### Implications<sup>338</sup> :

- Disclose the terms and conditions related to product listings, ranking algorithms, data utilization, and overall business practices. Any modifications to these terms must be communicated in advance to allow vendors and users sufficient time to adjust.
- Submit yearly fairness reports to the Ministry of Economy, Trade and Industry (METI), creating an ongoing compliance burden and regulatory scrutiny.
- Re-examine contractual terms, listing logic, and vendor support mechanisms on its digital platforms.
- Legal, compliance, and IT departments may need to establish new systems to support audit trails, manage version control of platform terms, implement user notification processes, and ensure timely reporting to METI<sup>339</sup>.

### Penalties<sup>340</sup>:

- Fines under the DPTA are relatively modest: **500,000 yen** (approximately **USD 3,500**).
- Reputational damage
- Increased regulatory scrutiny
- Potential enforcement actions

### Evaluation<sup>341</sup>:

- **Status:** Active and Expanding
- **Severity:** Low to Medium
  - The most common violations can result in substantial fines of up to 1 million yen. While financial penalties are not the primary enforcement mechanism, they can still negatively affect brand reputation, regulatory relations, and market access—particularly within B2B and public sector channels.
- **Enforcement Volatility:** Low to moderate
  - Enforcement is stable and follows a clear, rule-based process administered by Japan's Ministry of Economy, Trade and Industry (METI). Companies are typically given guidance, opportunities to self-correct, and formal notice before facing penalties.

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<sup>338</sup> Latham & Watkins LLP. *The Digital Services Act: Practical Implications for Online Services and Platforms*. March 2023.  
<https://www.lw.com/admin/upload/SiteAttachments/Digital-Services-Act-Practical-Implications-for-Online-Services-and-Platforms.pdf>.

<sup>339</sup> Amato, Jeffrey J. "Japanese Legislature Passes Act to Regulate Big Tech Platforms." *Competition Corner*, Winston & Strawn LLP. Last modified December 18, 2020.  
<https://www.winston.com/en/blogs-and-podcasts/competition-corner/japanese-legislature-passes-act-to-regulate-big-tech-platforms>.

<sup>340</sup> Cleary Gottlieb Steen & Hamilton LLP. *Digital Markets Regulation Handbook: Japan*. Authored by Fay Davies. Last modified April 2024. Accessed May 15, 2025.  
<https://content.clearygottlieb.com/antitrust/digital-markets-regulation-handbook/japan/index.html>.

<sup>341</sup> Ministry of Economy, Trade and Industry. "Evaluation on Transparency and Fairness of Specified Digital Platforms Compiled." Press release, December 22, 2022.  
[https://www.meti.go.jp/english/press/2022/1222\\_003.html](https://www.meti.go.jp/english/press/2022/1222_003.html).

- **Stage Classification:** Post Final Assembly

### **Task Force on Climate-related Financial Disclosures (TCFD)**

Established by the Financial Stability Board (FSB) to develop recommendations for voluntary, consistent climate-related financial disclosures. These disclosures are intended to help investors, lenders, insurers, and other stakeholders assess the financial implications of climate change on organizations<sup>342</sup>. While the recommendations are voluntary, the growing global push for climate-related financial transparency has led many companies and investors to adopt them. Under a comply or explain framework, companies listed on the Tokyo Stock Exchange's Prime Market are required to improve the scope and detail of their disclosures in alignment with the TCFD recommendations or a similar framework<sup>343</sup>.

#### **Scope<sup>344</sup>:**

- Governance
- Strategy
- Risk Management
- Metrics and target

#### **Timeline:**

- **Dec 2015:** TCFD established by the Financial Stability Board.
- **2016-2017:** Development of disclosure recommendations.
- **June 2017:** Final TCFD Recommendations released, organized into four thematic areas.
- **2018–2021:** Widespread adoption begins among private companies, financial institutions, and regulators<sup>345</sup>.
- **2022–2023:** Several jurisdictions (UK, New Zealand, Japan, EU, Singapore, etc.) move to mandate TCFD-aligned reporting.
- **2024–2025:** TCFD becomes foundational to global sustainability standards, including:
  - ISSB's IFRS S2 standard (launched in 2023) based on TCFD.

#### **Implications:**

- Maintain transparency to attract ESG-focused capital as investors are demanding TCFD-aligned disclosures as part of due diligence.

#### **Penalties<sup>346</sup>:**

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<sup>342</sup> TCFD Consortium. *About*. Accessed May 15, 2025. <https://tcf-consortium.jp/en/about>.

<sup>343</sup> TCFD Consortium. *TCFD Consortium*. Accessed May 15, 2025. <https://tcf-consortium.jp/en>.

<sup>344</sup> Task Force on Climate-related Financial Disclosures. *Recommendations of the Task Force on Climate-related Financial Disclosures*. Basel: Financial Stability Board, 2017. Accessed May 15, 2025. <https://www.fsb-tcf.org/recommendations/>.

<sup>345</sup> Task Force on Climate-related Financial Disclosures. "About." Accessed May 15, 2025. <https://www.fsb-tcf.org/about/>.

<sup>346</sup> Kate Granville Smith, "TPR Issues First Climate Change Reporting Fine for Failure to Publish TCFD Report," *Burges Salmon*, October 3, 2023. Accessed May 15, 2025.

- Direct Penalties: TCFD itself does not impose penalties.
- Indirect Penalties: Reputational damage, reduced investment, exclusion from stock indices, and pressure from shareholders.
- Emerging Legal Requirements: Some countries have begun to integrate TCFD into national regulations, leading to potential fines and penalties for non-compliance.

#### Evaluation :

- **Status:** *Effective*
- **Severity:** *Medium to High*
  - Given the increasing demand from investors, customers, and regulators for clear, standardized climate-related financial disclosures, non-compliance could result in reputational damage, loss of investor confidence, and potential financial consequences<sup>347</sup>.
- **Enforcement Volatility:** *Medium*
- **Stage Classification:** *Pre Final Assembly*

#### ii) Emerging Regulations

##### **Human Rights Due Diligence Legislation (In Development)**

Japan is strengthening its stance on corporate human rights obligations through the release of the Guidelines on Respecting Human Rights in Responsible Supply Chains, issued by the Ministry of Economy, Trade and Industry (METI).<sup>348</sup> Although these guidelines are currently non-binding, they represent a meaningful move toward institutionalizing Human Rights Due Diligence (HRDD) practices nationwide.

##### **Scope:**

Apply to all businesses operating in Japan, regardless of size or sector, including foreign entities with operations in the country<sup>349</sup>.

##### **Timeline:**

- **September 2022** - Voluntary Guidelines

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<https://www.burges-salmon.com/articles/102ipoi/tpr-issues-first-climate-change-reporting-fine-for-failure-to-publish-tcf-report/>

<sup>347</sup> Task Force on Climate-related Financial Disclosures. *Climate-Related Risks and Opportunities*. June 2017. Accessed May 15, 2025.

<https://www.tcfhub.org/Downloads/pdfs/Eo6%20-%20Climate%20related%20risks%20and%20opportunities.pdf>.

<sup>348</sup> Office of the United Nations High Commissioner for Human Rights. *Mandatory Human Rights Due Diligence (mHRDD)*. Accessed May 15, 2025.

<https://www.ohchr.org/en/special-procedures/wg-business/mandatory-human-rights-due-diligence-mhrdd>.

<sup>349</sup> Business & Human Rights Resource Centre. "Mandatory Due Diligence." Accessed May 15, 2025.

<https://www.business-humanrights.org/en/big-issues/governing-business-human-rights/mandatory-due-diligence/>.



- Japan's Ministry of Economy, Trade and Industry (METI) released the "Guidelines on Respecting Human Rights in Responsible Supply Chains." which encourage companies to implement HRDD practices, though they are not legally binding<sup>350</sup>.
- **April 2023** - Draft Legislation
  - The NGO Human Rights Now published a draft bill advocating for mandatory HRDD, urging the government to legislate by the end of 2023. A nonpartisan parliamentary group also recommended the introduction of mandatory HRDD legislation within the same timeframe<sup>351</sup>.
- **Legislative Outlook** - As of now, the Japanese government has not enacted binding HRDD legislation. However, the momentum from civil society and political groups suggests that such legislation could be introduced in the near future.

### Implications<sup>352</sup> :

If Japan enacts mandatory HRDD legislation, Dell would need to:

- Perform a gap analysis to evaluate its existing human rights policies and practices in relation to the proposed regulatory requirements.
- Engage with suppliers, employees, and other key stakeholders to enhance and reinforce its human rights due diligence efforts through collaborative practices.
- Closely track regulatory developments to remain up to date on legislative progress and ensure prompt compliance with emerging requirements<sup>353</sup>.
- Integrate Human Rights Due Diligence (HRDD) into its core corporate strategy by embedding human rights considerations throughout its business operations and decision-making processes.

### Penalties<sup>354</sup>:

<sup>350</sup> Business & Human Rights Resource Centre. "Japan: Human Rights Now Publishes Draft Legislation on mHREDD." Last modified April 22, 2023. Accessed May 15, 2025.

<https://www.business-humanrights.org/en/latest-news/japan-human-rights-now-publishes-draft-legislation-on-mhredden/>.

<sup>351</sup> Fukuhara, Ayumi. *Publication of Japan's First Human Rights Due Diligence (HRDD) Guidelines*. Nagashima Ohno & Tsunematsu, October 2022. Accessed May 15, 2025.

[https://www.noandt.com/wp-content/uploads/2022/09/compliance\\_en\\_no4.pdf](https://www.noandt.com/wp-content/uploads/2022/09/compliance_en_no4.pdf).

<sup>352</sup> Crockett, Antony, Joel Rheuben, Nina O'Keefe, and Jefferi Hamzah Sendut. "Japan Publishes Guidelines on Corporate Human Rights Due Diligence." *Society for Human Resource Management*, October 20, 2022.

<https://www.shrm.org/topics-tools/news/japan-publishes-guidelines-corporate-human-rights-due-diligence>.

<sup>353</sup> Ulula. "Japan Takes First Step to Effective HRDD Regulations, but It's a Long Road." Last modified August 24, 2022. <https://ulula.com/blog/hrdd/japan-hrdd-draft-guidelines/>.

<sup>354</sup> United Nations Development Programme. "Due Diligence of Companies in the Field of Human Rights: How the Experience of State Regulations in the EU and Japan Can Be Useful for Kyrgyzstan." Last modified January 16, 2024. Accessed May 15, 2025. <https://www.undp.org/kyrgyzstan/stories/due-diligence-companies-field-human-rights-how-experience-state-regulations-eu-and-japan-can-be-useful-kyrgyzstan>.



While specific penalties under the proposed Japanese HRDD legislation have not been finalized, similar laws in other jurisdictions provide a reference:

- **Financial Penalties:** In some countries, companies face fines up to 10% of their annual turnover for non-compliance with HRDD obligations.
- **Criminal Liability:** Repeated violations could lead to criminal charges against company executives, including potential imprisonment

Japan's forthcoming legislation is expected to incorporate similar enforcement mechanisms to uphold corporate accountability.

#### **Evaluation :**

- **Status:** *Draft*
- **Severity:** *High*
  - Non-compliance may lead to reputational damage, financial penalties, and potential legal risks, particularly for multinational companies like Dell. The law aims to hold companies accountable for human rights practices throughout their supply chains, which could significantly impact operational strategies.
- **Enforcement Volatility:** *Medium*
  - Enforcement volatility is currently moderate. Although there are no clear penalties yet, the enforcement mechanisms will likely evolve as the legislation becomes more formalized. As Japan continues to align with global standards, enforcement may intensify if political pressure or international commitments increase<sup>355</sup>.
- **Stage Classification:** *Pre Final Assembly*

#### **Sustainability Standards Board of Japan (SSBJ) Standards (Effective April 2025)**

The SSBJ released Japan's first sustainability disclosure standards, aligning with the International Sustainability Standards Board's (ISSB) IFRS S1 and S2 frameworks. These standards focus on general sustainability-related disclosures and climate-related disclosures, respectively<sup>356</sup>. While the application of these standards is voluntary starting April 2025, they are expected to become mandatory for prime-listed companies from 2027.

#### **Scope<sup>357</sup>:**

- Climate change risks and opportunities.

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<sup>355</sup> World Benchmarking Alliance. *80% of Companies Fail on Human Rights Due Diligence: Regulations, Guidance and Pressure Are Needed to Accelerate Change*. Last modified 2025. Accessed May 15, 2025. <https://www.worldbenchmarkingalliance.org/publication/social/findings/80-of-companies-fail-on-human-rights-due-diligence-regulations-guidance-and-pressure-are-needed-to-accelerate-change/>.

<sup>356</sup> Sustainability Standards Board of Japan. "SSBJ Issues Inaugural Sustainability Disclosure Standards to Be Applied in Japan." Last modified March 5, 2025. Accessed May 15, 2025. [https://www.ssb-j.jp/en/ssbj\\_standards/2025-0305.html](https://www.ssb-j.jp/en/ssbj_standards/2025-0305.html).

<sup>357</sup> ESG News. "Japan's SSBJ Issues First Sustainability Disclosure Standards Aligned with ISSB Guidelines." *ESG News*, March 5, 2025. <https://esgnews.com/japans-ssbj-issues-first-sustainability-disclosure-standards-aligned-with-issb-guidelines/>.

- Governance structures for sustainability.
- Financial impacts of environmental and social factors.
- Scenario analysis and target setting.

#### **Timeline<sup>358</sup>:**

- **March 5, 2025:** SSBJ officially issued three sustainability disclosure standards:
  1. Application Standard
  2. General Disclosures
  3. Climate-related Disclosure
- **April 2025:** The standards are made available for voluntary adoption by all companies listed in Japan.
- **March 2027:** Mandatory compliance will begin for companies listed on the Tokyo Stock Exchange (TSE) Prime Market with a market capitalization of JPY 3 trillion or more (approximately USD 19.5 billion)<sup>359</sup>.
- **March 2028:** Mandatory compliance extends to companies with a market capitalization of JPY 1 trillion or more.
- **2030s:** Full mandatory adoption anticipated for all TSE Prime Market-listed companies.

#### **Implications<sup>360</sup>:** In order to comply with SSBJ Standards, Dell may need to:

- Align its reporting (already based on frameworks like GRI, SASB, and TCFD) with the SSBJ's format and content—especially climate-related financial risk disclosure.
- Ready for mandatory compliance by March 2027 if it falls into the JPY 3 trillion market cap bracket within Japan or as regulations expand.

**Penalties<sup>361</sup>:** As of now, no specific penalties for non-compliance have been outlined. However, the Financial Services Agency (FSA) is exploring the establishment of a domestic sustainability assurance framework that aligns with international benchmarks, such as the International Auditing and Assurance Standards Board's (IAASB) ISSA 5000.

#### **Evaluation:**

- **Status:** *Effective*

<sup>358</sup> Sustainability Standards Board of Japan. *About SSBJ Standards*. March 5, 2025.

[https://www.ssbj.jp/wp-content/uploads/sites/7/20250305\\_e.pdf](https://www.ssbj.jp/wp-content/uploads/sites/7/20250305_e.pdf).

<sup>359</sup> Lee, Euisung. "Japan's SSBJ Finalized New Sustainability Disclosure Standards." *LinkedIn*, March 5, 2025.

<https://www.linkedin.com/pulse/japans-ssbj-finalized-new-sustainability-disclosure-standards-pywpc>.

<sup>360</sup> Lawless, Kyle P., Keiichi Ushijima, and Kan Hara. "What's Next for Japanese Sustainability Disclosure Standards." *EY Japan*. Last modified October 13, 2023. Accessed May 15, 2025.

[https://www.ey.com/en\\_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards](https://www.ey.com/en_jp/insights/sustainability/whats-next-for-japanese-sustainability-disclosure-standards).

<sup>361</sup> Yuko Yamamoto. "Japan's First Sustainability Disclosure Standards: Introduction of the SSBJ Standards." *Compliance & Risks*, March 12, 2025.

<https://www.complianceandrisks.com/blog/japans-first-sustainability-disclosure-standards-introduction-of-the-ssbj-standards/#:~:text=The%20proposed%20timeline%20for%20mandatory,1%20trillion%20JPY%20or%20more>.

- **Severity: Medium**
  - While currently voluntary, these standards are foundational and will become mandatory for large listed companies in phases starting March 2027.
- **Enforcement Volatility: Medium**
  - The framework is still developing, as Japan moves toward aligning with global standards such as the ISSB. However, enforcement mechanisms, including penalties and assurance requirements, are yet to be fully established.
- **Stage Classification: Post Final Assembly**

### **2050 Carbon Neutral Target**

The 2050 carbon neutrality target in Japan was established through an amendment to the Promotion Act of Global Warming Countermeasures, aligning the nation's climate strategy with the Paris Agreement<sup>362</sup>. The objective is to reach net-zero greenhouse gas emissions by 2050, relying on a mix of technological advancements and natural carbon absorption methods. The science community has determined that this level of emission reduction is necessary to limit global warming to 1.5°C above pre-industrial levels<sup>363</sup>. Key interim targets include a 46% reduction by 2030 (compared to 2013 levels), a 60% reduction by 2035, and a 73% reduction by 2040, culminating in full carbon neutrality by 2050<sup>364</sup>. As of 2024, Japan has reduced emissions by approximately 20% from 2013 levels, suggesting it is on a viable path to meet its 2030 milestone<sup>365</sup>.

### **Scope<sup>366</sup>:**

- Applies to all industries, including manufacturing, transportation, energy, construction, and agriculture.
- Renewable energy, hydrogen, nuclear, and energy storage
- Carbon capture, utilization and storage (CCUS)
- Hydrogen-based production

### **Timeline<sup>367</sup>:**

- **October 2020:** Commitment announced by Prime Minister Yoshihide Suga.
- **2025:** Foundation and Baseline
  - Complete a comprehensive GHG emissions inventory covering Scopes 1, 2, and 3 in accordance with recognized standards such as the GHG Protocol.

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<sup>362</sup> Net Zero Climate. *What is Net Zero?* Accessed May 15, 2025.

<https://netzeroclimate.org/what-is-net-zero-2/>.

<sup>363</sup> United Nations. *Net Zero Coalition*. Last modified 2025. Accessed May 15, 2025.

<https://www.un.org/en/climatechange/net-zero-coalition>.

<sup>364</sup> International Energy Agency. *Net Zero by 2050: A Roadmap for the Global Energy Sector*. Paris: International Energy Agency, May 2021. <https://www.iea.org/reports/net-zero-by-2050>.

<sup>365</sup> Government of Japan. "Together for Action: Japan's Initiatives." January 2024.

[https://www.japan.go.jp/kizuna/2024/01/together\\_for\\_action\\_japan\\_initiatives.html](https://www.japan.go.jp/kizuna/2024/01/together_for_action_japan_initiatives.html)

<sup>366</sup> European Commission. *European Climate Law*. Accessed May 15, 2025.

[https://climate.ec.europa.eu/eu-action/european-climate-law\\_en](https://climate.ec.europa.eu/eu-action/european-climate-law_en).

<sup>367</sup> Climate Action Tracker. "Japan." Accessed May 15, 2025.

<https://climateactiontracker.org/countries/japan/>.

- Establish interim science-based targets aligned with the 1.5°C pathway, and begin integrating a decarbonization roadmap into the organization's core strategic planning<sup>368</sup>.
- **2026–2030<sup>369</sup>: Initial Reductions and Capacity Building**
  - **Scope 1 & 2**
    - Transition to renewable electricity (RE100 or equivalent).
    - Electrify operations and switch to low-carbon fuels.
    - Retrofit facilities and improve energy efficiency.
  - **Scope 3**
    - Implement circular economy strategies.
    - Decarbonize supply chains through collaboration, innovation, and incentives.
    - Promote low-carbon products/services.
- **2030: Cut greenhouse gas emissions by 46% from 2013 levels.**
- **2035<sup>370</sup>: Scaling Solutions and Deep Cuts**
  - **Scope 1 & 2:**
    - Achieve >80% emissions reductions.
    - Phase out fossil fuels entirely.
  - **Scope 3:**
    - Implement circular economy strategies.
    - Decarbonize supply chains through collaboration, innovation, and incentives.
    - Promote low-carbon products/services.
- **2040: Final Push and Residual Emissions**
  - Address residual emissions through high-quality, permanent carbon removals.
  - Achieve full decarbonization of direct operations and core supply chain.
  - Prepare third-party validation for net-zero status.
- **2050: Final Phases of Decarbonization**
  - Officially declare carbon neutrality across Scopes 1, 2, and 3.
  - Maintain annual disclosures and continuous improvement.

**Implications<sup>371</sup>:** In order to comply with the 2050 Carbon Neutral Law, Dell may need to:

<sup>368</sup> Tasuku Kuwabara, Detlev Mohr, Benjamin Sauer, and Yuito Yamada. "How Japan Could Reach Carbon Neutrality by 2050." *McKinsey & Company*, August 4, 2021. Accessed May 15, 2025. <https://www.mckinsey.com/capabilities/sustainability/our-insights/how-japan-could-reach-carbon-neutrality-by-2050>.

<sup>369</sup> Liu, Y., Wang, X., & Zhang, Z. "Title of the Article." *Renewable and Sustainable Energy Reviews* 165: 112500, 2022. <https://doi.org/10.1016/j.rser.2022.112500>.

<sup>370</sup> Government of Japan. "Together for Action: Japan's Initiatives for Achieving the Common Goal of Net Zero by 2050." Last modified January 26, 2024. Accessed May 15, 2025. [https://www.japan.go.jp/kizuna/2024/01/together\\_for\\_action\\_japan\\_initiatives.html](https://www.japan.go.jp/kizuna/2024/01/together_for_action_japan_initiatives.html).

<sup>371</sup> Obayashi, Yuka. "Japan to Craft 2040 Strategy of Decarbonisation and Industrial Policy." *Reuters*, May 13, 2024. <https://www.reuters.com/sustainability/climate-energy/japan-craft-2040-strategy-decarbonisation-industrial-policy-2024-05-13/>.

- See opportunities for innovation in areas like energy-efficient products, recyclability, and low-carbon technologies, which would align with Japan's sustainability goals.
- Implement measures to monitor and reduce carbon emissions throughout the supply chain.
- Transition to renewable energy sources for operations in Japan to meet regulatory requirements and sustainability goals.
- Collaborate with industry groups and policymakers to stay informed about upcoming regulations and contribute to shaping effective climate policies.

#### **Penalties:**

- **Emissions Trading System (ETS):** Companies that exceed their allocated carbon allowances will need to buy additional credits or incur financial penalties<sup>372</sup>.
- **Green Transformation (GX) Surcharge:** Non-compliance with the GX surcharge regulations could lead to additional surcharges or other financial penalties<sup>373</sup>.
- **Potential Future Regulations:** As Japan's climate policies continue to evolve, failure to comply with new regulations may result in more severe penalties, such as fines or operational restrictions.

#### **Evaluation:**

- **Status:** *Passed*
- **Severity:** *High*
  - The 2050 carbon neutrality target necessitates comprehensive changes in business operations, with significant implications for companies like Dell.
- **Enforcement Volatility:** *Medium*
  - While current enforcement mechanisms are being established, future regulations may introduce stricter compliance requirements.
- **Stage Classification:** *Pre Assembly*

#### **Circular Economy Legislation (Upcoming Amendments to Waste Management Law)**

Japan is advancing its circular economy efforts by making significant amendments to its waste management laws, with a particular emphasis on requiring recycled content in manufacturing. This move aligns with Japan's broader strategy to foster environmental sustainability and economic resilience. The ongoing legislative and policy developments highlight the nation's proactive stance on enhancing resource efficiency and reducing waste<sup>374</sup>. These changes are set to affect companies like Dell that operate in Japan or engage with Japanese supply chains.

<sup>372</sup>Sakamoto, Hiroshi. "Japan's Carbon Tax Policy: Limitations and Policy Suggestions." *Environmental Challenges* 5: 100058, 2021. <https://www.sciencedirect.com/science/article/pii/S266604902100058X>.

<sup>373</sup> Kiko Network. *Japan's Path to Net Zero by 2050: 2030 and 2040 GHG Reduction Targets and Policy Recommendations*. March 19, 2021. Accessed May 15, 2025. [https://www.kiconet.org/wp/wp-content/uploads/2021/05/NetZero-Report-2050\\_EN.pdf](https://www.kiconet.org/wp/wp-content/uploads/2021/05/NetZero-Report-2050_EN.pdf).

<sup>374</sup> Zenbird Editorial Team. "Circular Economy in Japan." Last modified April 2022. Accessed May 15, 2025. <https://zenbird.media/circular-economy-in-japan/#:~s>.

**Scope:**<sup>375</sup>

- Manufacturing and Product Design
- Waste Management and Recycling
- Consumer Goods and Electronics
- Supply Chains and Logistics
- Emissions and Climate Goals

**Timeline:**

- **May 29, 2024:** Advancement of Recycling Business Act
- **February 25, 2025:** Amendment to the Act on the Promotion of Effective Utilization of Resources
- **2026:** The formal establishment of an emissions trading system, mandating participation for businesses with substantial direct CO<sub>2</sub> emissions<sup>376</sup>.
- **2028:** Creation of a GX surcharge collection system, set to be implemented along with the provision of financial support for green transformation (GX) initiatives through the issuance of GX Economic Transition Bonds<sup>377</sup>.

**Implications**<sup>378</sup> :

In order to comply with Japan's evolving regulations, Dell may need to:

- Boost the incorporation of recycled plastics and other materials into product design and manufacturing processes to comply with Japan's mandatory regulations.
- Collaborate closely with suppliers to ensure adherence to recycled content standards and foster sustainable practices across the entire supply chain.
- Investigate and implement advanced recycling technologies to enhance the efficiency and effectiveness of recycling processes, in line with government initiatives that support businesses utilizing such technologies.
- Investigate and implement advanced recycling technologies to enhance the efficiency and effectiveness of recycling processes, in line with government initiatives that support businesses utilizing such technologies.

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<sup>375</sup> Reusable Packaging Association. "Circular Economy Legislation – The International Experience." *Reusable Packaging Association*,

<https://www.reusablepackaging.org/insights/circular-economy-legislation-the-international-experience>.

<sup>376</sup> Bangert, Helene. *Japan's Circularity: A Panorama of Japanese Policy, Innovation, Technology and Industry Contributions Towards Achieving the Paris Agreement*. EU-Japan Centre for Industrial Cooperation, December 11, 2020.

[https://www.eu-japan.eu/sites/default/files/publications/docs/japans\\_circularity\\_-\\_helene\\_bangert\\_-\\_11.12.2020.pdf](https://www.eu-japan.eu/sites/default/files/publications/docs/japans_circularity_-_helene_bangert_-_11.12.2020.pdf).

<sup>377</sup> Tanabe, Yasuo. "Japan and the EU Need to Work Together to Present a Circular Economy Model to the World." *RIETI*(blog), February 6, 2025. [https://www.rieti.go.jp/en/columns/a01\\_0775.html](https://www.rieti.go.jp/en/columns/a01_0775.html).

<sup>378</sup> Ministry of Economy, Trade and Industry. *Circular Economy Vision 2020*. May 2020. [https://www.meti.go.jp/shingikai/energy\\_environment/junkai\\_keizai/pdf/20200522\\_03.pdf](https://www.meti.go.jp/shingikai/energy_environment/junkai_keizai/pdf/20200522_03.pdf).

**Penalties<sup>379</sup>:**

- Failure to submit recycling reports may result in fines for non-compliance.
- Improper waste disposal or treatment can lead to criminal penalties, including fines of up to ¥10 million (approximately 64,000 USD) or imprisonment in severe cases.
- Recycling businesses may face fines and possible revocation of their licenses for submitting false reports or withholding information.

**Evaluation:**

- **Status:** *Passed & Effective*
- **Severity:** *Medium*
  - Focuses on gradual alignment and collaboration rather than heavy fines or litigation.
- **Enforcement Volatility:** *Low*
  - While specific enforcement actions may vary depending on the sector and region, the overall approach remains consistent, focusing on gradual implementation and stakeholder engagement<sup>380</sup>.
- **Stage Classification:** *Pre Final Assembly*

## Appendix J. Brazil

### i) Emerging Regulations

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<sup>379</sup> Center for Circular Economy and Technology. *Japan Case Study: Law Enforcement on Illegal Dumping and Illegal Treatment of Medical Waste in Japan*. March 11, 2022.

[https://ccet.jp/sites/default/files/2022-03/Japan%20case%20study\\_20220311\\_WEB.pdf](https://ccet.jp/sites/default/files/2022-03/Japan%20case%20study_20220311_WEB.pdf).

<sup>380</sup> Dustin Benton and Jonny Hazell. "The Circular Economy in Japan." *The Institute for Environmental Sciences*, April 2015. <https://www.the-ies.org/analysis/circular-economy-japan>.



### **Brazil REACH (Law No. 15.022/2024)**<sup>381</sup>

The country's first comprehensive regulation for chemical substance registration, risk assessment, and management. It aligns Brazil with global standards such as the EU REACH framework. The law targets substances produced or imported at  $\geq 1$  ton/year and aims to build a National Inventory of Chemical Substances. It introduces mandatory registration, a risk prioritization system, and potential restrictions or bans on hazardous chemicals. A notable feature is the creation of an "Only Representative" (OR) system for foreign manufacturers.

#### **Scope:**

- Applies to all chemical substances manufactured or imported in Brazil in volumes of 1 ton or more per year, whether used on their own or in mixtures. Exemptions include substances for research, defense, food, cosmetics, and other specified categories

#### **Timeline:** <sup>382</sup>

- Passed: November 13, 2024
- Effective: November 2024
- Implementation expected by May 2025
- Registration platform to be developed by November 2027
- Companies will then have 3 years to complete registrations (final deadline around 2030)

#### **Implications:**

- Mandatory registration of eligible chemicals in the National Inventory of Chemical Substances
- Risk assessments for prioritized substances based on environmental and human health indicators
- Required submission of chemical identity, production/import volumes, hazard classification, and GHS-compliant SDS
- Introduction of an "Only Representative" system allowing foreign manufacturers to appoint local entities to manage compliance
- Foreign and domestic companies must prepare for potential data requests, new testing, and compliance documentation

#### **Penalties:**<sup>383</sup>

- Fines of 5% to 40,000 times Brazil's minimum wage (approx. up to R\$72 million or ~\$14.5M USD)

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<sup>381</sup>Government of Brazil. *Lei nº 15.022, de 13 de novembro de 2024. Diário Oficial da União*, November 13, 2024. <https://www.in.gov.br/en/web/dou/-/lei-n-15.022-de-13-de-novembro-de-2024-596246409>.

<sup>382</sup>ChemLinked. "Brazil REACH Adopted into Law." November 22, 2024. <https://chemical.chemlinked.com/news/chemical-news/brazil-reach-adopted-into-law>.

<sup>383</sup>Knoell. "Brazil REACH – Brazilian Law 15.022 and the Current State of Chemical Regulatory Affairs in the Country." December 7, 2024. <https://www.knoell.com/en/news/brazil-reach-brazilian-law-15022-and-the-current-state-of-chemical-regulatory-affairs-in-the>.



- Possible bans on manufacturing/import, seizure of non-compliant substances, or suspension of company operations.

#### **Evaluation:**

- **Status:** *Partially Effective*
  - With phased implementation. The law is in force as of November 2024. Detailed regulations and the online system are pending but due by 2027, with full compliance expected by 2030
- **Severity:** *High*
  - Could have a significant impact on upstream supply chains due to mandatory registration and risk assessments for chemicals used in volumes  $\geq 1$  ton/year. Particularly relevant for Dell's components involving plastics, metals, adhesives, coatings, or flame retardants.
  - Broad compliance obligations
  - Substantial financial penalties
  - Suspension of production or sales, seizure or destruction of goods, and even revocation of operating licenses can severely disrupt supply chain continuity
  - Reputational damage is also likely if Dell is perceived to be linked to unregistered or hazardous substances in Brazil's market. Operational risk is heightened for any unprepared supplier or business unit using affected chemicals, particularly in electronics manufacturing
- **Enforcement Volatility:** *Medium*
  - Initially, enforcement may be inconsistent while the Brazilian government finalizes regulatory frameworks and builds the digital infrastructure for registration. However, once the system is launched (targeted by 2027) and the 3-year registration window begins, enforcement is expected to intensify rapidly. Regulatory uncertainty remains until the implementing decree is published (expected by mid-2025), but companies should anticipate stricter oversight post-2027, especially for high-risk or high-volume chemicals
- **Stage Classification:** *Pre-assembly*
  - The regulation primarily affects Dell's sourcing and supplier compliance, especially for parts produced in Brazil or sourced from Brazilian chemical suppliers. Companies must ensure chemical inputs are properly registered and risk-assessed before production or integration

#### **Law No. 15,042/2024 – Brazilian Greenhouse Gas Emissions Trading System (SBCE)**<sup>384</sup>

#### **Scope:**

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<sup>384</sup> Government of Brazil. *Lei nº 15.042, de 11 de dezembro de 2024. Diário Oficial da União*, December 11, 2024. <https://www.in.gov.br/en/web/dou/-/lei-n-15.042-de-11-de-dezembro-de-2024-601124199>.

- Entities emitting  $\geq 25,000$  tCO<sub>2</sub>e/year will be required to surrender allowances; entities emitting  $\geq 10,000$  tCO<sub>2</sub>e/year must comply with reporting obligations. Applies broadly across sectors, excluding agriculture but including manufacturing, energy, mining, and logistics

#### **Timeline:**<sup>385</sup>

- Law passed: 2024
- Regulation phase-in: 2025–2029
- Full implementation (Phase V): Post-2029

#### **Implications for Dell:**

- Dell may face mandatory emissions reporting if any of its Brazilian operations—particularly manufacturing facilities or logistics hubs—exceed emissions thresholds. While direct inclusion is uncertain without facility-specific data, Dell suppliers may be regulated, requiring Dell to audit supply chain emissions and possibly participate indirectly in offset credit purchases or emissions trading. Sustainability and compliance documentation will become more important in supplier contracts and traceability systems

#### **Penalties:**

- Fines of up to 3% of a company’s gross revenue, rising to 4% for repeat offenses
- Fixed fines between BRL 50,000–20 million (USD ~9,000–3.7 million)
- Potential embargoes on operations for non-compliance

#### **Evaluation:**

- **Status:** *Passed*
  - With phase-in implementation
- **Severity:** *Low*
  - Depending on the scale of suppliers in Brazil for Dell. The thresholds are moderate, especially compared to other emission regulations, and could realistically apply to:
    - Large manufacturing plants
    - Data centers or logistics hubs (e.g., distribution centers with high energy use)
    - Key suppliers involved in energy-intensive component production (e.g., metal fabrication, plastics, PCBs)
- **Enforcement Volatility:** *High*
  - As Brazil finalizes its cap, registry, and compliance mechanisms, rules are subject to change. Early phases will emphasize monitoring, but penalties could escalate rapidly post-implementation.

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<sup>385</sup> Mattos Filho. “Law No. 15,042/2024: Overview of Brazil’s Emissions Trading System (SBCE).” December 12, 2024.  
<https://www.mattosfilho.com.br/wp-content/uploads/2024/12/241212-livreto-en-law-150422024-1.pdf>.

- **Stage Classification:** *Post-assembly*
  - The regulation primarily targets emissions from operations and facilities. For Dell, this affects post-assembly functions such as manufacturing plants, logistics hubs, or high-energy-use distribution centers—particularly if the suppliers cross the emissions threshold.