

STRATEGIC TECHNOLOGY LANDSCAPE 2023

Risks, Opportunities, and Wild Cards

Overview

Geopolitics is disrupting the multi-trillion-dollar technology sector. Escalating competition, new restrictions on the flow of technology and data across borders, and supply chain disruptions have reinforced that the intersection of technology and geopolitics is an urgent, existential issue for global companies.

In 2023, governments will continue to assert that certain technologies and their supply chains are of strategic and national security importance. Internet platforms, hardware companies, and software makers will grapple with new regulations and emerging norms on issues such as online content, artificial intelligence, data protection, and competition. The semiconductor industry will enter uncharted territory as governments spend taxpayer money to address supply chain risks and enforce new export controls. In an increasingly digital world, the fortunes of every company will be bound up in political changes affecting the tech sector and the rapid evolution of technology itself.

The expanding Technology Policy and Strategy Group of Dentons Global Advisors-Albright Stonebridge Group (ASG) brings together leading experts in technology policy, law and regulation, strategic communications, and government relations to help companies navigate these shifts. In this inaugural Strategic Technology Landscape report, we identify the key political and policy trends that will shape the technology sector in 2023. Some trends are already well-established but are heading for disruptive new developments. Some are likely to emerge as major issues for policymakers and companies. Others are wild cards that could create surprises for CEOs and boards as the technology sector shapes and is shaped by global events.

We look forward to the opportunity to help you anticipate, understand, and develop strategies for addressing the risks and opportunities these trends will create for your business this year and beyond.

U.S.-China: Eroding co-dependence

Widening technology fissures between the U.S. and China driven by rising geopolitical tensions will erode each side's dependence on the other in 2023. While some policymakers in both countries will welcome this trend, it could have unintended consequences.

The Biden administration will continue to introduce measures affecting the flow of technology, data, and capital to China, adding to existing U.S. curbs on semiconductors and semiconductor manufacturing inputs, while pressuring allies to do the same. Beijing will redouble efforts to break its dependence on U.S. and other foreign technology and promote Chinese firms' overseas expansion. The risk of Chinese retaliation against U.S. or other Western firms will grow as export controls hurt its domestic chipmakers.

The bigger risk is the gradual decline of advanced technology co-dependence itself. The idea that neither country can thrive without access to the other's tech sector has arguably been one of the forces preventing a worse deterioration of the U.S.-China relationship. If Beijing or Washington becomes convinced that it is possible to manage the costs of a technology divorce, the risk of a confrontation over Taiwan or another hot-button issue will go up.

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The fate of the popular app TikTok – which some U.S. lawmakers and officials want to ban over data security concerns, in light of its Chinese ownership – will be an important sign of how this trend may evolve. At a minimum, more companies will face pressure to accelerate plans to start excluding more U.S. or Chinese technologies from their respective supply chains, find new markets for manufacturing, and limit the fallout of new technology restrictions.

National security: The Starlink effect

The growing realization of how much modern-day national security relies on a handful of mainly U.S.-based companies will have political and business consequences in 2023. Call it “the Starlink effect”: A rapid transition of Ukraine's government information technology infrastructure to the cloud and access to Starlink – a private satellite network that can provide internet access from low-Earth orbit – helped the country withstand Russia's invasion of the country in early 2022 by preserving critical government functions and vital military and civilian communications.

Ukraine's experience will increase political pressure in the U.S. for tougher restrictions on technologies and data that could speed China's military development and ability to circumvent Western sanctions. The Starlink effect will also worsen Europe's technology conundrum. Brussels wants to rein in Big Tech and promote more homegrown European champions, but is more reliant on the U.S. – and U.S. tech companies – for its security than ever before. This will naturally create tensions around the bloc's regulatory agenda.

Companies will face new pressures as well: Being indispensable to national security can enrich corporations, but also tends to lead to tighter regulation. Pressure on companies to collaborate with governments on geopolitical priorities will grow – think: recent reports about the U.S. government holding talks with Starlink’s parent company SpaceX about helping Iranians connect to the internet during recent protests in the country, and calls for U.S. tech companies to provide more early warning data on cyber and other asymmetrical threats.

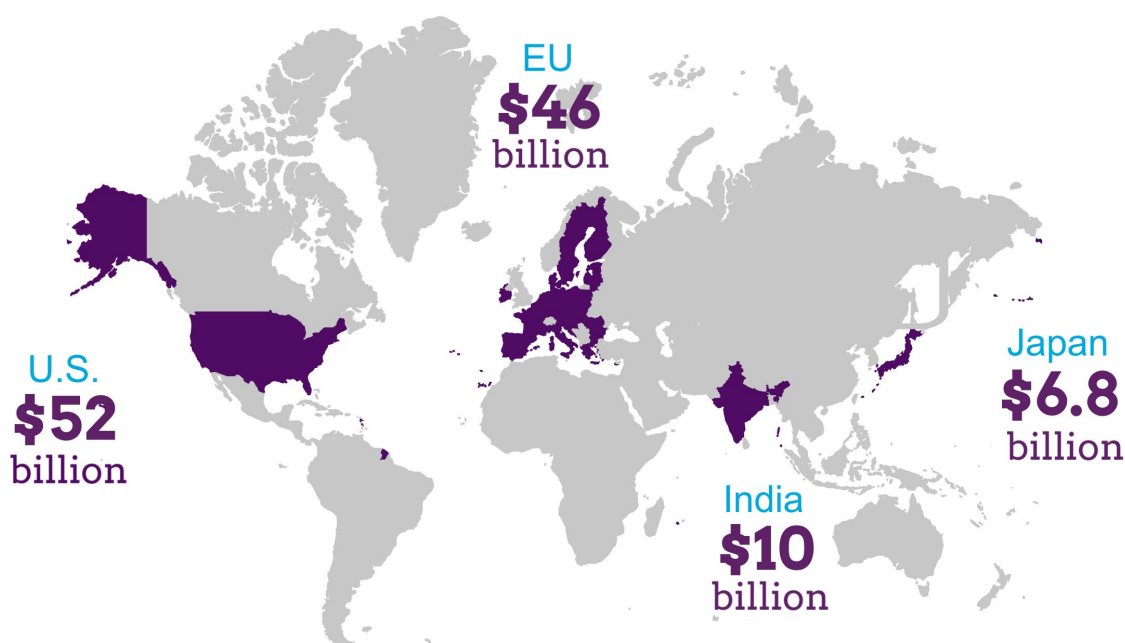
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Semiconductors: Double-edged subsidies

This year, the U.S., Europe, Japan, and other large economies will start to hand out billions of dollars of public money to boost domestic semiconductor manufacturing and attract high-tech jobs. As the cash starts flowing in 2023, the world’s most important industry will open a new and potentially risky chapter.

Designing, manufacturing, and packaging the chips that power the digital economy relies on an intricate division of labor that has developed over decades under market pressures. Without close coordination between governments and companies across multiple countries, subsidies launched in 2023 to improve industry resilience could end up undermining it instead.

Select Government Semiconductor Incentives



Source: [Semiconductor Industry Association](#)

As governments compete to lure investment, the risk that companies build too much new manufacturing capacity will increase. That could eventually hit prices and sap profits that are ultimately recycled into innovation. The recent disagreement between the EU and the U.S. over electric vehicle subsidies showed how poor governmental coordination on industrial policy can create ill will and trade frictions.

Semiconductor companies' relationships with governments will take on new importance in this environment. Companies that can make the case that their semiconductor projects will help countries meet their economic, political, and national security goals will have a once-in-a-generation opportunity to upgrade manufacturing and invest in R&D. But government money will also come with strings attached, including pressure to deliver on promises of new factories and jobs, even in an economic downturn. With the future of this critical industry hanging in the balance, there is a lot riding on getting this right.

AI regulation: Overtaken by events

Governments, civil society, and the private sector have spent years hammering out principles for how safe and responsible AI should work. In 2023, the EU, China, the U.S., the U.K., and other countries will face the far more difficult task of translating principles into detailed regulations. As with all attempts to create guidelines for new technology, regulators risk writing rules that are irrelevant by the time they take effect.

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Recent, exponential improvements in generative AI tools, particularly the performance of large language models like ChatGPT that became evident in late 2022, illustrate the challenge. These AI systems – which can mimic natural human language and write computer code – have the potential to revolutionize software development and will soon power new types of personal assistants and search engines. In the wrong hands, they could enable new forms of plagiarism, spam, and disinformation, or help hackers uncover bugs and write malicious code.

Regulators will face big challenges as companies and investors pour more money into the sector in 2023. Attempts to draft detailed, prescriptive rules will quickly fall out of date and may choke off beneficial innovation. More flexible approaches based on promoting voluntary best practices and monitoring for new uses of AI will also struggle to keep up with the pace of change. Regulators will be chronically behind the curve as they struggle to attract AI experts to government jobs. The result could be worse than no AI regulation at all. Companies will need to step carefully but may have new opportunities to shape policy debates.

India: A technology “swing state”

India's infrastructure challenges, bureaucratic hurdles, and political support for domestic tech firms mean it's always been a tough market for global companies. If India moves closer to other major democracies on technology policy and digital trade, it would be a huge opportunity for companies re-thinking their long-term plans in China.

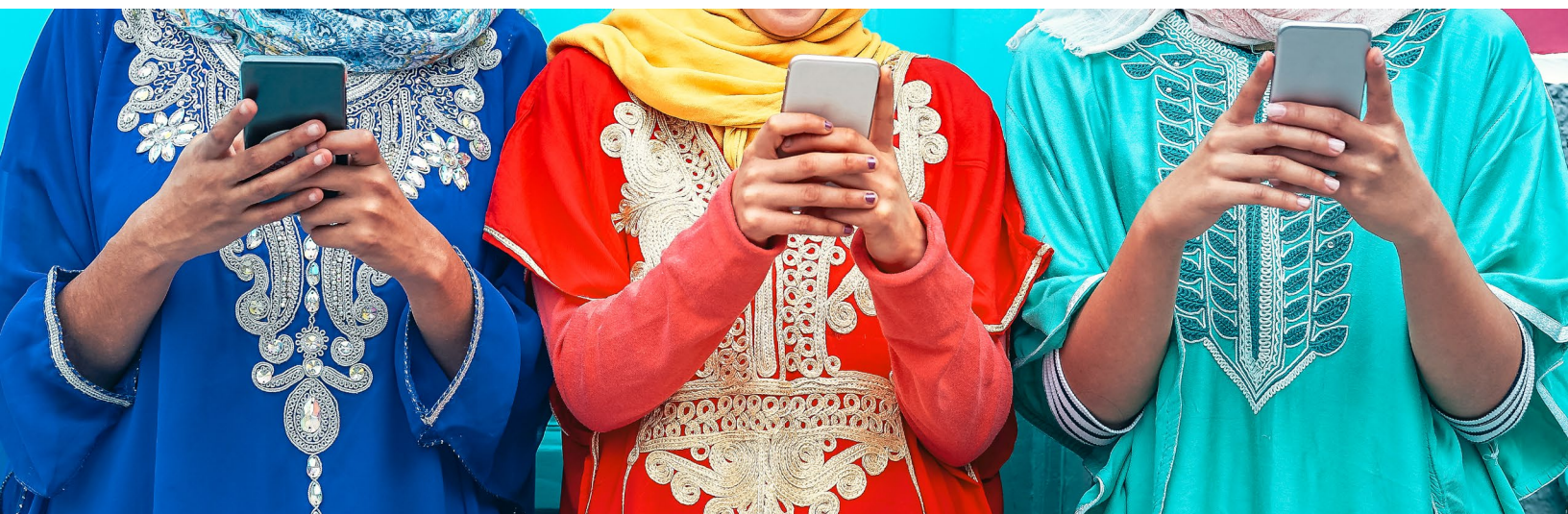
India's tech policy environment may be easing in certain respects, evidenced by the scrapping of a controversial data protection bill that would have required significant data localization. A new

draft significantly eases cross-border data flow. Although it relies heavily on subsequent rulemaking by the government, businesses that position themselves strategically could help shape those rules. India's strategy for attracting global semiconductor investment also looks more business-friendly and open to foreign investment than past attempts.

Where India goes on competition policy, other emerging markets could follow.

At the same time, competition authorities' traditional restraint in technology matters is waning as the government contemplates EU-style rules for large digital platforms. Where India goes on competition policy, other emerging markets could follow. India's ongoing efforts to regulate non-personal data, a recently released draft telecommunications bill, and content moderation policies will also pose potential risks for technology companies in 2023.

Navigating these risks will require a nuanced and up-to-date understanding of intra-governmental dynamics and the government's broader political priorities. In 2023, Prime Minister Narendra Modi's priorities will include shaping the international dialogue on tech policy during his government's ongoing G-20 presidency. And as decoupling of Western and Chinese tech stacks gains momentum, deft engagement by global companies in India will be important for turning possibilities for greater cooperation into reality.



Data flows: Obstacles ahead

Last year wasn't the disaster it could have been for data flows. A deal between the U.S. and the EU to preserve transfers of personal data across the Atlantic appears to be sticking – for now. But companies that rely on the smooth flow of information across borders can't rest easy. With geopolitical tensions rising, the risk of digital fragmentation will grow in 2023.

Developments in India, the EU, and China – which will start to enforce its own comprehensive data regime this year – bear close monitoring. So will trends in the U.S., where the government's treatment of TikTok, which is owned by the Chinese tech giant ByteDance, will set an important precedent for how companies should handle concerns about China's potential access to sensitive U.S. data. If a proposed national security deal requiring TikTok to store such data with a U.S. cloud provider becomes a new norm, it could embolden other governments to impose new

requirements for “data localization” in the name of national security. India, for instance, has shown interest in doing this, especially in relation to China.

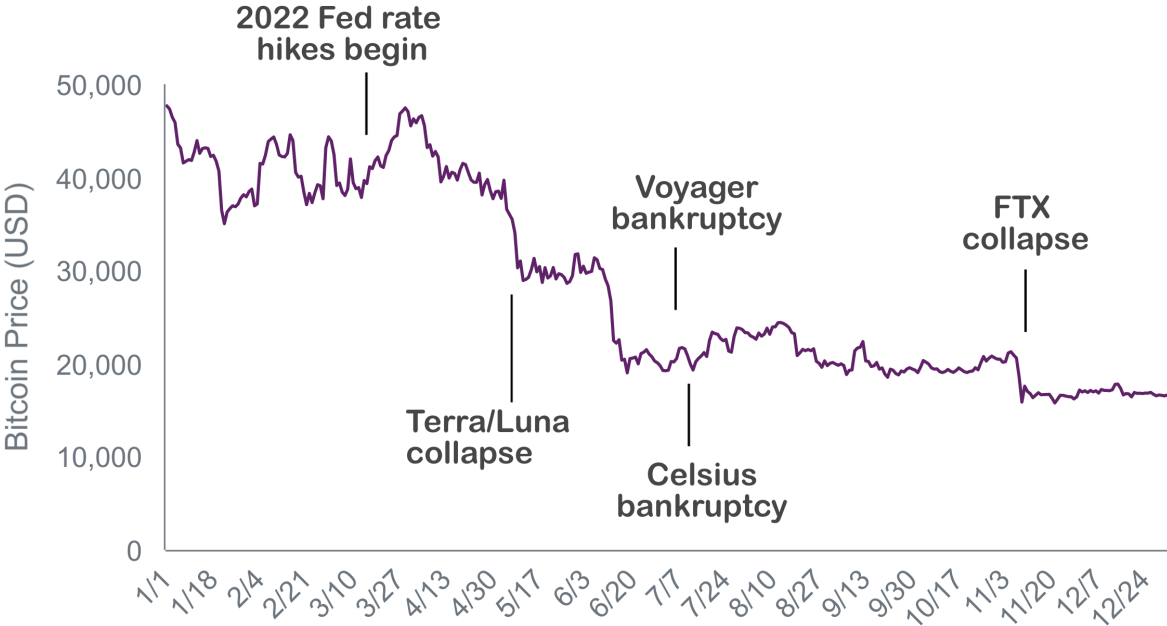
On the other hand, failure of the deal, which is under massive political pressure from Congress, would leave other companies without a roadmap for addressing U.S. national security concerns about data. It could also prompt lawmakers to push for broader restrictions that would block transfers of certain data to China, such as AI training datasets – creating headaches for global firms.

Data issues will figure prominently in regional trade discussions and other venues like the Indo-Pacific Economic Forum this year. But time is running out for achieving broader agreement on how to regulate data flows across increasingly sensitive geopolitical borders.

Cryptocurrency: Spring may follow winter

History has shown that boomtime excesses give way to bankruptcies and regulatory crackdowns. The cryptocurrency industry took its turn at the end of 2022. In 2023, fallout from the collapse of high-profile firms like FTX, Voyager, and Terra-Luna will prompt governments to protect consumers, crack down on scams, and address risks to financial stability.

Cryptocurrency Under Pressure in 2022



Source: [Yahoo! Finance](#)

Crypto winter will be hard on companies, but it will accelerate the professionalization of the industry. Venture capitalists and other funders will step up due diligence and oversight. Companies and projects that generate real economic benefits will survive – and may even thrive – as government scrutiny and a funding drought weed out the scammers and grifters. Some digital assets will be regulated more like traditional financial services.

Companies with solid balance sheets will have opportunities to buy distressed assets and put programming talent to more productive uses. Governments will experiment with central bank digital currencies. A chastened sector will continue to explore blockchain applications in industry and the metaverse. Crypto winter will eventually give way to crypto spring – and a healthier ecosystem.



Europe: Digital sovereignty sputters

This year, the EU will start to enforce new rules for online platforms and content. It will also argue over details of the world's most ambitious regulatory framework for AI and face a tsunami of data and cybersecurity-related concerns. While the stated goal is to make Europe “fit for a digital age” by fostering healthy competition and removing obstacles to an EU-wide market in digital goods and services, the EU has also been pushing the idea of “digital sovereignty.” Brussels and key member states like France don't want Europe's future prosperity and security to depend on the whims of a handful of American tech giants.

But the EU's elaborate regulatory scaffolding will prove unable to fix the bloc's innovation problems. There is little appetite in Brussels or European capitals to address more fundamental issues that are holding the continent's tech sector back, including risk-averse business and regulatory cultures, fragmented venture capital markets, difficulty of awarding stock options, lagging university curricula, and inflexible labor policies.

As the burden of regulation increases, established companies that can field teams of lawyers will widen their advantages over more entrepreneurial firms. Investing in digital sovereignty could come at the expense of more fruitful investments that build on Europe's strengths, like speeding up the digital transformation of manufacturing and the service economy. Sputtering innovation may either lead to a much-needed re-think for Europe's digital sovereignty push or further retrenchment by its most protectionist elements.

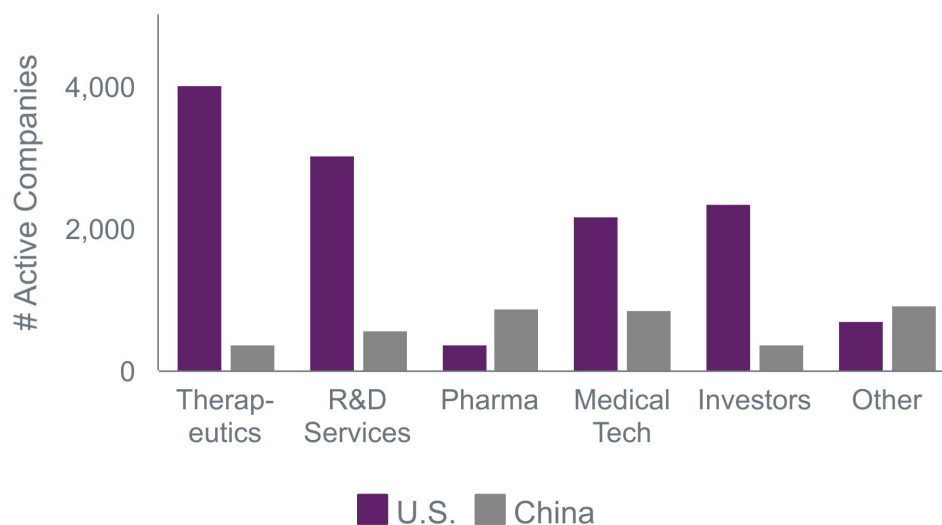
Biotechnology: Geopolitical battleground

Biotechnology will move to center stage in the U.S.-China technology confrontation in 2023. The industry is undergoing a revolution as scientists combine advances in synthetic biology with AI, and with big data, to help discover new medicines, design hardier crops, and devise new materials and manufacturing techniques. Those developments will attract government attention in Washington as the Biden administration tries to boost manufacturing and high-tech jobs. Meanwhile, the rise of big Chinese biotech companies and worries about how China might use their capabilities are also fanning concerns in Washington.

The U.S. has already taken some initial steps to address national security concerns spawned by advances in biotechnology, including restricting exports of software used to make long DNA and RNA strands that have the potential to help treat diseases but could also be used to make biological weapons. Washington has also singled out Chinese genomics giant BGI and two of its subsidiaries over alleged links to ethnic repression in Xinjiang and the Chinese military.

Political pressures on the industry will intensify in 2023 as a new U.S. National Security Commission on Emerging Biotechnology begins meeting to devise recommendations to Congress for a more comprehensive U.S. national strategy on biotech. The Biden administration may also place new restrictions on flows of healthcare and genomic data. An industry that is used to cross-border collaboration will likely face a tough geopolitical learning curve.

Biotech Companies in the U.S. and China, by Sector



Source: [Biotech Gate](#)

Green tech: Easier said than done

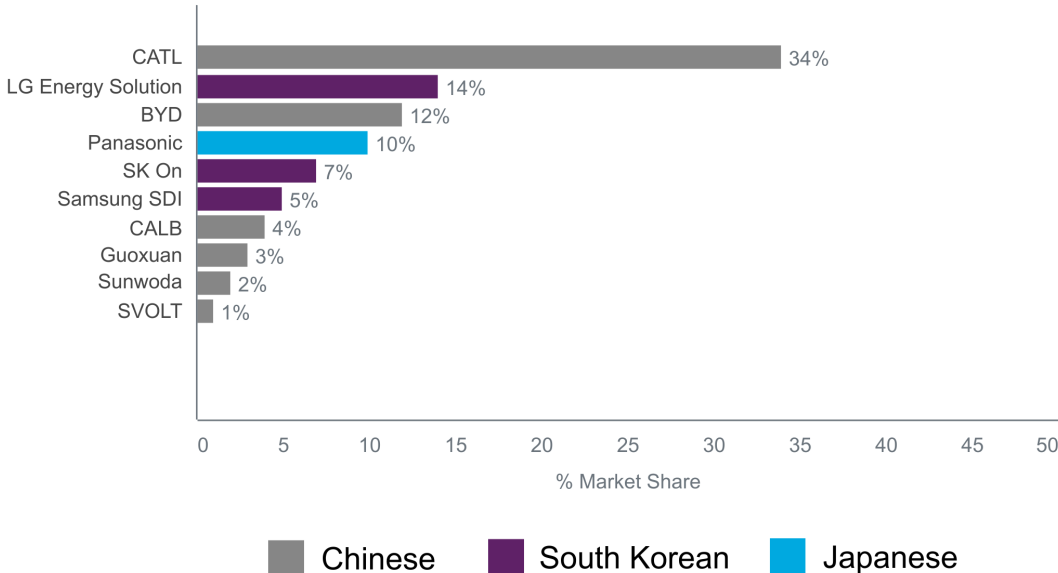
Governments will step up efforts in 2023 to encourage more resilient supply chains in green technologies. The race by countries to attract new investments in domestic manufacturing and build regional supply chains for items including electric vehicle (EV) batteries and rare earth magnets could intensify trade tensions and complicate attempts by advanced economies to coordinate on broader tech, trade, and China policies.

The recent confrontation over the U.S. Inflation Reduction Act (IRA) offers a taste of what’s likely coming. The law is intended to curb inflation by, among other things, investing in domestic energy production. It contains incentives to kick-start private sector investment in green tech supply chains, but it has rankled America’s allies by restricting generous subsidies for electric vehicles to cars made in North America with domestic components.

In sharp contrast to semiconductor production, where China is still racing to catch up to global leaders like the U.S., South Korea, and Taiwan, Chinese companies dominate the global market for electric vehicle batteries and critical minerals. Disrupting the status quo will require significant policy changes to increase processing and production capacity, coupled with serious investments and subsidies by would-be competitors.

Policymakers will remain focused on national security concerns and reducing dependence on China for key technologies and critical minerals. As with semiconductors, effective coordination on green subsidies and industrial policy will be important for avoiding unintended consequences. In 2023, we will carefully track how the U.S. actually implements some of the more controversial IRA provisions. The political fireworks could be significant.

Top 10 EV Battery Companies, by Market Share (2022)



Source: [E-vehicle Info](#)

The metaverse: Second act

Investors and tech bosses including Meta CEO Mark Zuckerberg bet big on the metaverse in 2022. This year, regulators will take an interest.

The metaverse is the tech industry term for the convergence of virtual reality, gaming, and blockchain technologies that some technologists think will be the next big phase of the internet. Instead of surfing web pages and apps, boosters foresee a high-definition 3D virtual world where people can hang out, buy stuff, and start virtual businesses.

Investment in the concept topped \$120 billion in the first half of 2022 alone. Some software companies have rebranded themselves as metaverse platforms, and governments in South Korea and Saudi Arabia have laid out detailed plans to use the metaverse to provide public services and boost economic growth. Companies are increasingly using virtual platforms to conduct day-to-day business.

In 2023, regulators will crash the party. The EU will examine whether existing regulatory tools are strong enough to protect children and prevent scams and other bad behavior the metaverse will enable. Brussels could also complicate attempts by U.S. tech giants to acquire smaller metaverse companies and technologies, using its new antitrust toolkit under the Digital Markets Act. Crackdowns on cryptocurrency will also take a toll, given the importance that early adopters have attached to crypto assets' role in the metaverse.

In Beijing, meanwhile, the government will likely move to wall off any incipient Chinese metaverse as soon as the concept shows any signs of gaining traction. That could lead to a further bifurcation between China and the West. As these trends play out, it will become clearer whether the metaverse can move beyond niches like gaming and online shopping and into the technology mainstream.

Wild card: The Taiwan question

The risk of a Chinese military invasion of Taiwan or another event that disrupts the world's most important technology hub is low. But low is not zero. And the cost of an unforeseen incident or crisis that interfered with the flow of semiconductors and other critical technology components in and out of Taiwan would be potentially enormous. A miscalculation involving Taiwan is our top wild card risk for 2023.

Companies and other stakeholders should keep a steady eye on the state of the U.S.-China relationship. Officials in Washington and Beijing will be working hard in early 2023 to put the bilateral relationship back on a stable course. But domestic political pressures will continue to work against this, particularly when it comes to Taiwan.

The new U.S. Speaker of the House of Representatives, Kevin McCarthy, is likely to announce plans to visit Taiwan in the spring or early summer. Avoiding a major escalation in U.S.-China tensions will require building trust between now and then. This will be hard after nearly six years in which the relationship has unraveled. Neither side can fully control all the variables.

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There are many things that could spark a crisis, but two risks stand out. First, an accidental encounter involving military hardware in the Taiwan Strait or nearby airspace could spiral out of control. Second, action by the U.S. Congress or the administration that explicitly move the U.S. towards promoting Taiwan's independence could make Xi Jinping feel that Washington has crossed a line that demands a forceful response. Any sustained interruption of sea lanes or air traffic moving in and out of Taiwan would immediately disrupt the technology sector and the broader global economy. The tremendous costs of such a move should keep this risk in check; the firm's China team will be constantly monitoring developments.

About ASG

Albright Stonebridge Group (ASG), part of Dentons Global Advisors, is the premier global strategy and commercial diplomacy firm. We help clients understand and successfully navigate the intersection of public, private, and social sectors in international markets. ASG's worldwide team has served clients in more than 120 countries.

Dentons Global Advisors is an expert-led advisory firm that provides integrated solutions for clients in an increasingly complex, regulated, and interconnected business environment. Comprising Albright Stonebridge Group and a deep bench of communications and strategy consultants, we help clients engage with governments and regulatory bodies, navigate public disclosures and transactions within the private and capital markets, and manage their reputations through critical moments of change, challenge, or opportunity. Our relationship with Dentons, the world's largest law firm, means clients can draw upon integrated legal expertise and strategic advisory services when and where they need them.

ASG's [Technology Policy and Strategy Group](#) brings together leading experts in technology, policy, and corporate strategy to help clients navigate complex, high-stakes issues at the intersection of technology and global affairs. Working together with regional and country experts and a broader network of strategic communications and government affairs professionals, our team provides trusted counsel to help business leaders avoid risks and capture opportunities created by digital disruption.

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