TSMC: lessons in strategy and operational excellence from the world's chipmaker

For leaders navigating uncertainty, TSMC's story highlights shared challenges — and points the way to staying on top.

September 1, 2025

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When Morris Chang, after an illustrious career in the semiconductor industry in the U.S., was

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put at the helm of the newly founded Taiwan Semiconductor Manufacturing Company (TSMC) in 1987, he chose to do something unusual for the time: focus solely on fabricating chips designed by other companies.

Back then, industry giants like Intel and AMD believed in doing everything themselves, from designing to manufacturing. Owning your own fabrication plant, or “fabs” as the industry calls them, was regarded as a core competence, an entry barrier for competition and a means of capturing the largest share of the value chain. “Real men have fabs!” the CEO of AMD once quipped. But TSMC upended that business model, to the point that AMD’s current CEO, Lisa Su, recently remarked that “Real women don’t need fabs!”

TSMC is the world’s largest semiconductor foundry, supplying key customers like Nvidia, Apple, Broadcom and Qualcomm. By devoting all its strategic focus and its financial and human resources to the R&D of cutting-edge process technologies, and then scaling its manufacturing capacity, TSMC has become not just the world’s go-to source of leading-edge chips, but the lifeblood on which entire industry sectors depend. Jensen Huang, CEO of Nvidia, which designs state-of-the-art graphics processing units (GPUs) used in the latest AI applications, admits his company wouldn’t exist without TSMC.

So, how did a company that didn’t exist 40 years ago, located on an island whose tradition was low-end manufacturing, achieve this dominant position as a technology and manufacturing leader, whose high-end chips are now fiercely sought after, especially in this era of AI, as the new gold?

Made in Taiwan: TSMC’s rise to the top

TSMC’s success arises from a blend of special ingredients and business dynamics of their time.

Restructuring of the value chain

The 1990s and 2000s were a period when U.S. chip companies redefined their core capabilities. Companies like Nvidia, and later Apple, saw their competitive advantage lay in their superior chip design, something they jealously guarded and were not prepared to outsource for fear of being copied. On the other hand, it was felt that chip manufacturing could be outsourced to suppliers with better cost economics and technical expertise, marking the business trend of going “fabless.”

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On paper, this made financial sense: The design part of the semiconductor value chain corresponds to 13% of the CapEx but 50% of the total value added, whereas chip manufacturing (what TSMC does) accounts for 64% of the CapEx and 24% of the value added. On that basis alone, why *wouldn't* you concede chip manufacturing to TSMC?

Long-term perspective

Building a fabrication plant is extremely expensive, so unless you can achieve certain levels of productivity and efficiency, the economics don't make sense for most companies. TSMC had the advantage of being founded with the support of the Taiwanese government, which was looking to position Taiwan as a leading industrial and manufacturing base, and so it provided a steady source of capital investment and support over many years.

This enabled TSMC to adopt a long-term perspective. Innovating at the manufacturing process level, like TSMC does, is often not breakthrough innovation; it happens through marginal, continuous improvement. In these situations, having steady leadership is vital because it empowers a company to keep refining operations, home in on one critical competency and make progress step by step, year after year, on a patient path toward becoming a technology leader. Contrast that with the short-term pressures faced by many CEOs of public companies, who are preoccupied with ensuring profitability quarter after quarter, and who may not be around in a year's time, much less after a decade.

Mission, vision and core values

Besides being a technology and manufacturing leader, TSMC aspires to be the most reputable, service-oriented and maximum-total-benefits foundry in the world. Chang had a very clear vision from the outset, and everyone who works for TSMC is committed to the company's mission. TSMC is a top employer and a source of national pride in Taiwan, with very low employee turnover. People don't work long hours and make personal sacrifices just because they have to; they believe in what they do. Having a dedicated workforce fully committed to the mission is key.

Reshoring, nearshoring and geopolitical risk-spreading

All these factors contributed to TSMC's inexorable rise to become the crown jewel of the semiconductor industry. But in the 2010s, things began to shift.

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In a world without significant macroeconomic or geopolitical frictions — as was the case for most of the 1990s and early 2000s, after the collapse of the Soviet Union and before the rise of U.S.-China tensions — offshoring production and relying on global supply chains made sense. But over the course of the past decade, the world has grown more tumultuous, and business strategies are changing to reflect the new state of affairs.

During Donald Trump's first administration, the U.S. government began ramping up the rhetoric against China and decried the concession of critical manufacturing to Asia. As if to prove this point, the global supply-chain disruptions caused by the COVID-19 pandemic in 2020 were a wake-up call to the business world of the dangers of overly concentrating manufacturing capacity in certain geographic locations. The fact that over 90% of global production of advanced chips was done on a small island in the South China Sea started being seen as a risk rather than a competitive advantage.

This accelerated a movement of reshoring or nearshoring components considered critical for national security, culminating in the CHIPS Act under the Biden administration to entice chip manufacturing back to the U.S. For its part, TSMC, whose industrial footprint was highly concentrated in Taiwan, decided to expand overseas.

TSMC is facing questions that may be familiar to many companies today: What to do now, given the geopolitical risks and the more protectionist stance of the U.S., imposing tariffs and putting up trade barriers that threaten previously unfettered market access?

Executives may also be asking themselves, as Chang did in relation to TSMC's multibillion-dollar Arizona facility, what's the point of all this geopolitical risk-spreading if there is no conflict between China and Taiwan? "And if there is a war then, my goodness, we have a lot more than chips to worry about."

From a pure business perspective, it makes sense to have one company do the complex manufacturing of chips, whose costs keep coming down due to economies of scale and economies of aggregation. Lower cost implies higher production volume, which, in turn, enables the company to keep improving its processes and integrate new learnings much faster into production, leading to better and better technology. Without any macroeconomic or geopolitical frictions, this model works.

But that's not the world we live in today. Risk diversification is required, and it doesn't come for free. You're required to make huge outlays, and even when financial incentives, like tax breaks, are being offered to help offset some of the costs, they are nowhere near enough to

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justify the greater expenditure.

As Chang found out from prior attempts to relocate chip manufacturing to the U.S., the costs are much higher than in Taiwan, and the productivity is lower because, in the U.S., there is much higher competition for skilled labor and a very different work culture. The end result is paying more for less output.

As if all this wasn't enough, chip manufacturing is becoming a target because of its large carbon footprint, requiring vast amounts of energy and water, which, in a place like Arizona, is a real concern.

Reflections for managers, inspired by TSMC

- **Which sacrifices are you prepared to make?** It may be necessary to give up some operational efficiencies or assume some costs in order to hedge risks. What should you sacrifice though, and at what cost? Managerial judgment is key.
- **What won't you sacrifice?** Is everyone clear on the corporate vision? What are your mission-critical values and the cultural factors that you will never compromise on?
- **Think location.** Related to culture, which factors are very much tied to the location of your business? How much of your success is related to talent, tacit knowledge, work ethic, organizational design, local supply chains and the surrounding ecosystem that feeds and sustains your business? These contribute to core competitive advantage and can be hard to replicate elsewhere.
- **Keep your options open.** In 2025's volatile environment, many multinationals have frozen major strategic decisions or investments in the short term. While there may be some opportunity cost from doing so, if the future looks too uncertain, it may be wise to wait and see, always remaining alert, flexible and adaptable so you can act quickly as the picture grows clearer.
- **Think long term.** Longer term, it seems reasonable to assume that the world is moving toward more fragmentation and regionalization, so planning for nearshoring and friendshoring is valid. Few companies have the ability to think decades down the road and consistently do the hard thing, year after year. But it's important to invest in such things, because maintaining a long-term trajectory of robust growth, excellent financial performance and technological supremacy may ultimately depend on it. And you don't need to have the deepest pockets or the strongest brand to get there. As the TSMC case shows, slow and steady may very well win the

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race.

MORE INFO: The business case study "TSMC: Chip manufacturing in the era of AI" by Mihalis G. Markakis is available from IESE Publishing.

Balance operational efficiency with resilience to weather geopolitical storms

READ ALSO: Maria Marced, President of TSMC Europe, talks about the pendulum-swing back to more localization and the undeniable reality that geopolitical collaboration is going to be crucial. Featured in the report AI: Using your power for good published in *IESE Business School Insight* magazine No. 163 (Jan.-April 2023).

This article is included in *IESE Business School Insight* online magazine No. 170 (Sept.-Dec. 2025).

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