India’s semiconductor ambitions hinge on building a diversified and resilient manufacturing base. Right now, the country is making progress with its first major CMOS fab, but to be globally competitive, it will need:Memory fab: Essential for producing DRAM and NAND, which power everything from smartphones to data centers. Without this, India risks dependence on imports from South Korea, Japan, and the U.S.Display fab: Critical for LCD and OLED panels used in TVs, laptops, and mobile devices. This would reduce reliance on China and South Korea.Compound semiconductor facilities: These are vital for power electronics, EVs, 5G, and defense applications. Materials like GaN (Gallium Nitride) and SiC (Silicon Carbide) are increasingly important for high-performance chips.To put it in perspective, Taiwan, South Korea, and China built their ecosystems by ensuring vertical integration — fabs for logic, memory, displays, and specialty semiconductors all co-exist, supported by strong supply chains and R&D. India’s challenge is not just building fabs but also securing semiconductor supply chains (chemicals, gases, wafers) and skilled workforce.If India manages to establish at least one of each type of fab, plus multiple compound semiconductor plants, it could position itself as a regional alternative to East Asia in the next decade.