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MEDIATEK INC. (2454TW)

GICS Sector: Information Technology

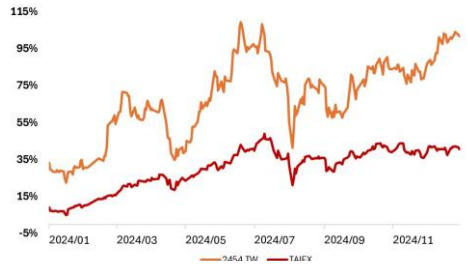
GICS Industry: Semiconductors & Semiconductor Equipment

Taiwan Stock Exchange Corporation (TWSE)

Recommendation	Buy
Date	12.31.2024
Current Price	NT$1,415
Target Price	NT$1,628
Upside	15.1%

Market Profile	
Exchange	TWSE
Ticker	2454.TW
Industry	Semiconductor
Market Cap.	NT$2.15T
Shares Outstanding	1.59 B
52-Week High	NT$1,500
52-Week Low	NT$879
Listing Date	7.23.2001
P/E	19.88(x)
P/Sales	4.32(x)
P/B	5.4(x)
EV/Sales	4.01(x)
EV/EBITDA	14.71 (x)

1-Year Return Comparison



Source: TEJ

Equity Distribution

	Shares (in Thousands)	Proportion
Directors and Supervisors	43,523	2.72%
Foreign Investors	945,043	59%
Securities Investment Trusts	121,064	7.56%
Self-Operators	2,900	0.18%

Source: TEJ

Proportion of Foreign Ownership

Source: TEJ

Eastern Hegemon in the IC Design Industry

We initiate our coverage of MediaTek with a **BUY** recommendation and a target price (TP) of NT$1,628, implying an upside of 15.1%. Using Forward P/E valuation, with an EPS forecast of NT$77.5 in 2025, we arrive at a 21x PE multiple (historical peak) based on: (1) high-growth AI integration in automotive, ARM-based AIPC, and data center segments diversifying beyond smartphones, (2) growth potential from WiFi 7 adoption, and (3) expanding flagship smartphone market share from Qualcomm. We believe that a re-rating of MediaTek's true value based on its strengthening market position and optimistic financial outlook is realizing by the market consensus with its one-month price momentum.

Entering High Growth Potential AI Segments Lead to Re-Rate

MediaTek's strategic expansion into AI-driven cloud and edge computing positions the company as a key player in the evolving semiconductor landscape. With a focus on capitalizing on generative AI advancements, MediaTek has leveraged its robust design capabilities and partnerships, including a notable order for Google's TPU v7 and cooperation with TSMC on advanced node turnkey services. As demand for on-device AI computing accelerates, MediaTek targets to capture market share through its NVIDIA collaboration for automotive cockpit platforms and ARM-based AIPC development. This transition underscores the necessity for a re-rating to reflect the company's growing leadership in high-potential AI segments and its reduced reliance on traditional segment.

Flagship and Wi-Fi 7 Drive Strong Revenue and EPS

The global smartphone market is set to recover in 2025, with a projected 2% growth, primarily driven by Android phones in China and emerging markets. The Dimensity 9400, with its 15-20% price-performance advantage over its main competitor, Qualcomm's Snapdragon 8 Elite, positions MediaTek to expand its presence in premium segments, particularly amid rising demand for AI-enabled smartphones. MediaTek is also benefiting from the increasing adoption of Wi-Fi 7, with global penetration expected to reach 10% in 2025. Networking products, including 5G FWA and Wi-Fi 7 solutions, are anticipated to drive additional revenue in 2H24, bolstered by expanding broadband infrastructure investments in North America.

We forecast MediaTek's revenue and EPS to remain robust in 2025/26, with projected revenue of NT$603/699 billion (YoY growth of 15.1%/16.0%) and EPS of NT$77.51/84.92 (YoY growth of 13.3%/9.6%). This outlook is driven by: (1) The smartphone market is expected to bottom out in 1H24, with the launch of Dimensity 9400 (D9400) anticipated to secure design wins in the flagship segment due to its pricing advantage over the 8 Elite; (2) MediaTek's Wi-Fi 7 products benefiting from the networking market recovery, maintaining strong shipment momentum into 2025 as it narrows the competitive gap.

Exceeding industry averages in ESG performance, thereby reducing downside risks

Our ESG analysis indicates MediaTek outperforms the industry median and global top 10 IC design companies in environmental and social aspects. It suggests a 4.7% ESG premium in stock price. We summarize MediaTek's ESG performance in order of its importance:

Social: Low turnover and injury rates, competitive salaries, and a high proportion of female employees highlight strong talent management. Employee retention continues to improve through diversity initiatives. **Governance**: 50% independent directors and high attendance reflect solid governance. MediaTek also leads in cybersecurity, earning the TCSA Cybersecurity Leadership Award twice and TISAX certification, underscoring its excellence in the field. **Environmental**: MediaTek excels in energy efficiency through data center optimization and LED upgrades, keeping carbon intensity below 0.21 CO2e/million.

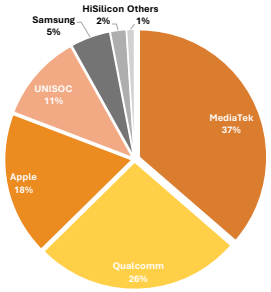
Valuation-P/E method: Buy Rating

We employed relative valuation focusing on the P/E method, reflecting the profitability prospects and high growth outlook. This method is further refined by incorporating the PEG ratio, which adjusts the P/E metric to account for the expected EPS growth and overall business prospects, enhancing our assessment's precision and relevance. Our research displays that high-end chips and networking products will boost MediaTek's market share in both of WiFi-7 segment and the premium smartphone segment, thereby driving growth in its largest revenue segment, mobile phones, in FY25. Over the long term, MediaTek's strategic expansions into automotive chips and AI-related businesses are expected to foster revenue growth in the Smart Edge division.

	FY21	FY22	FY23	FY24E	FY25F	FY26F
Revenue (million, NTD)	**493,415**	**548,796**	**433,446**	**523,594**	**602,560**	**698,694**
Net Income (million, NTD)	111,421	118,141	76,979	108,687	123,143	134,910
Sales Growth (%)	**53.16%**	**11.22%**	**-21.02%**	**20.80%**	**15.08%**	**15.95%**
Gross Margin (%)	46.94%	49.36%	47.84%	49.51%	48.10%	47.24%
EBIT Margin (%)	**25.74%**	**24.75%**	**20.10%**	**23.46%**	**22.92%**	**21.64%**
NI Margin (%)	22.67%	21.62%	17.81%	20.90%	20.57%	19.42%
EPS	**70.60**	**74.62**	**48.52**	**68.41**	**77.51**	**84.92**
ROE (%)	27.55%	26.95%	18.84%	26.39%	26.33%	26.77%

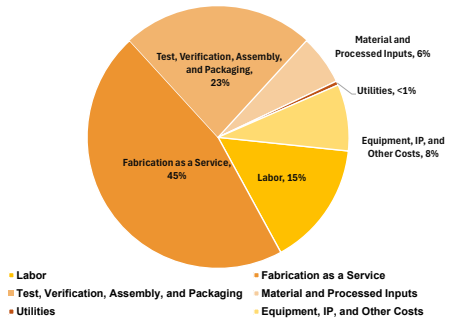
Source: TEJ, Team Analysis

FIGURE 1: Worldwide Smartphone SoC Market Share



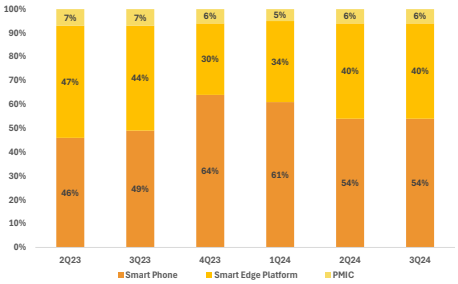
Source: Statista

FIGURE 2: Fabless' Cost Structure



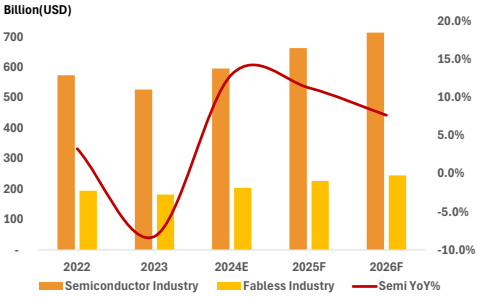
Source: BIS

FIGURE 3: MediaTek's Quarterly Revenue Composition



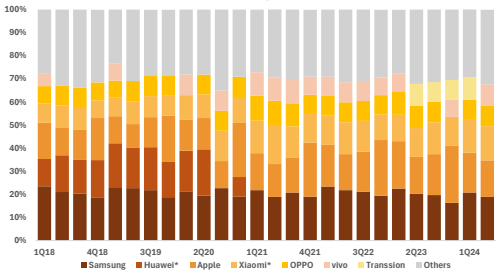
Source: MediaTek

FIGURE 4: Global Semi Market Size and Growth



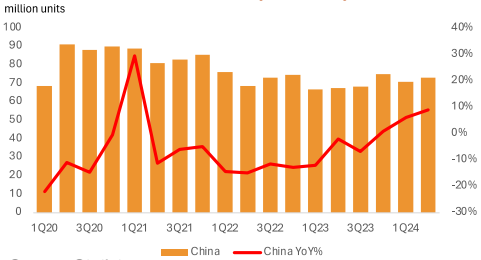
Source: IEK, Team Analysis

FIGURE 5: Global Smartphone Market Share



Source: Statista

FIGURE 6: China Smartphone Shipments



Source: Statista

Business Description

Founded in 1997, MediaTek is Taiwan's largest and the world's fifth-largest fabless semiconductor company, specializing in wireless communications and digital multimedia SoC solutions. As a top-three global mobile chip supplier, MediaTek held a 40% market share in smartphone SoCs in 1Q24 (Figure 1). MediaTek's products include smartphones, the Smart Edge platform, and PMICs, and it also provides design, testing, repair, and consulting services. Headquartered in Hsinchu Science Park, the company employed 21,982 people in 2023, including 19,228 R&D engineers.

Business Model

MediaTek operates primarily under two business models:

1)Designing Proprietary Products: MediaTek designs its own branded chips, which are manufactured and tested by foundries and packaging/testing companies before being sold to customers.

2)Custom Chip Design Service (ASIC): MediaTek designs custom chips based on customer specifications, a service known as Non-Recurring Engineering (NRE). The company charges a one-time NRE fee, along with service fees for assisting clients with production at foundries (Turn-Key).

Cost Structure

Fabless companies minimize CAPEX by outsourcing wafer manufacturing and assembly/testing to foundries and OSAT. According to BIS Research (Figure 2), their primary costs are labor (15%) and wafer outsourcing (45%), with assembly/testing making up 23%, totaling over 80% of their costs.

R&D expenditure is crucial for competitiveness, typically recorded as R&D expenses, though ASIC-related costs may be listed as COGS. In 2023, MediaTek's R&D intensity was 25.7%, above the industry average of 20%, highlighting its focus on innovation.

Revenue Breakdown

In 1H24, 50% of MediaTek's revenue came from smartphones, including 3G/4G/5G SoCs, primarily serving Chinese brands, with a recent expansion into high-end flagship chips. Smart Edge accounted for 43% of revenue, covering (1) networking equipment, consumer electronics, and automotive communication chips, (2) ARM-based computing SoCs and ASICs, and (3) TV SoCs. Future growth is focused on Data Center ASIC and automotive applications like Dimensity Auto for smart cockpits. PMICs contributed 7% of revenue, enhanced by the Richtek acquisition, with a focus on smartphones and PCs, often bundled with SoCs to boost sales (Figure 3).

Industry Overview & Competitive Positioning

Industry Overview

The semiconductor industry operates across Fabless, Foundry, OSAT, and IDM business models (Appendix B-1) (Appendix B-2), with 2024 showing divergent trends between soft consumer demand and robust AI-driven cloud CAPEX expansion. Looking ahead to 2025, key drivers include (1) Trump's semiconductor protectionist policies raising industry costs, (2) expanding AI adoption in edge devices, and (3) the shift to inference-driven computing demand. We project the global semiconductor market to reach US$663/714 billion in 2025/2026 (YoY 11.3%/7.7%) (Figure 4).

The IC design sector, operating under the Fabless model, represents the upstream segment of the semiconductor value chain. These companies design and sell chips while outsourcing manufacturing to foundries like TSMC. Major players including NVIDIA, Qualcomm, Broadcom, AMD, and MediaTek serve both consumer products (smartphones, PCs) and enterprise applications (data centers, IPCs). We forecast the global Fabless market to reach US$227/245 billion in 2025/2026 (YoY 11.0%/8.0%).

Smartphone Market Overview

The global smartphone market, led by Samsung, Chinese brands (Vivo, Oppo, Xiaomi), and Apple (Figure 5) (Appendix B-3), demonstrates seasonal peaks in Q4 driven by new iPhone releases and shopping events. Following its 2017 growth peak, the market has entered maturation with slower growth and longer replacement cycles. The Android segment, driven by Chinese market dynamics (Figure 6) (Appendix B-4), features Qualcomm leading the flagship market while MediaTek focuses on mid-to-low-end chips, alongside Unisoc. For 2024, global smartphone growth is projected at 3%, with the expectation of boosting domestic demand with recent fiscal and monetary easing policies implemented by China government.

AI-Driven Growth in High-End Smartphones

The smartphone industry experienced a pivotal shift toward AI integration in 2024, initiated by Samsung's S24 Series featuring Snapdragon 8 Gen 3, followed by similar launches from Chinese OEMs (Figure 7) (Appendix B-5). While these releases have driven notable price increases in flagship models due to enhanced AI specifications and advanced node manufacturing costs, our analysis indicates that the anticipated AI-driven replacement cycle has not materialized, primarily constrained by two factors: (1) the absence of compelling AI "killer applications" and (2) current limitations in LLM (large language model) accuracy. Nevertheless, we maintain a constructive long-term view on AI penetration into mainstream segments, supported by IDC's forecast of 78.4% CAGR for AI-enabled smartphones during 2023-2028, significantly outpacing the broader smartphone market's 2.3% growth rate.

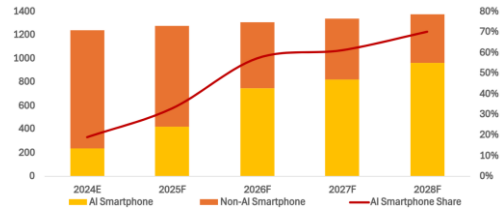
Breaking the GPU Stronghold: The ASIC Era in AI Computing

The rise of generative AI has sharply increased global demand for computing power, with CSPs (cloud service providers) choosing between GPUs and custom ASICs for AI workloads. GPUs offer higher performance, while ASICs excel in power efficiency and cost. CSPs are turning to ASICs to reduce reliance on NVIDIA's GPU monopoly and lower operational costs. In the short term, Broadcom benefits from strong front-end design amid rising ASIC investments. However, as front-end design becomes critical, CSPs are internalizing this function and outsourcing back-end work, favoring Taiwan-based firms like MediaTek, Alchip, and Global Unichip.

Wi-Fi 7 Penetration on the Rise

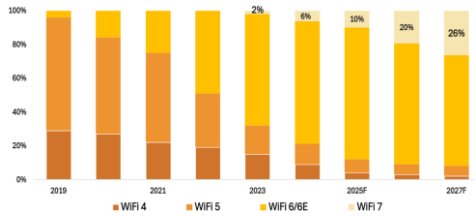
Wi-Fi 7 (Appendix B-6), offering high-speed data transfer, double bandwidth, low latency, and low interference, is essential for applications like AR/VR, 8K TV, and autonomous driving. Although it is still in the market introduction phase and more expensive than Wi-Fi 6/6E due to advanced chip production, it is firstly being adopted in routers, APs, and gateways, with high-end smartphones and PCs following. Qualcomm, Broadcom, and MediaTek dominate the Wi-Fi 7 chip market, with Qualcomm and MediaTek leveraging their smartphone SoC integration for stable shipments. Wi-Fi 7 penetration is projected to reach 10% in 2025 (Figure 8).

FIGURE 7: AI Smartphone Penetration Rate



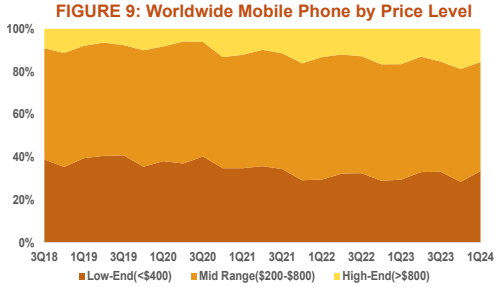
Source: IDC, Team Analysis

FIGURE 8: WiFi-7 Penetration Forecast



Source: IDC, Team Analysis

FIGURE 9: Worldwide Mobile Phone by Price Level



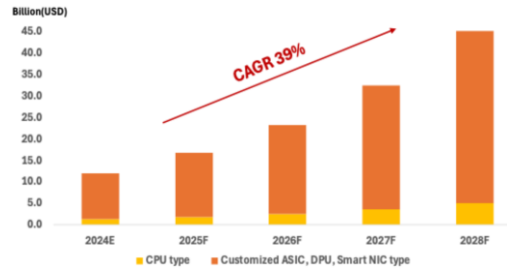
Source: Cmoney, Team Analysis

FIGURE 10: Development Pipeline of AI ASICs

CSP	ASIC	Node	Timeline	Design Partners
Google	TPU v6	3nm	2025	AVGO
Google	**TPU v7**	**3nm**	**2026**	**MTK**
Amazon	Trainium 2, Inferentia 3	5nm	2024	MRVL
Amazon	Trainium 3, Inferentia 4	3nm	2025	Alchip
Microsoft	Maia 100	5nm	2024	GUC
Microsoft	Maia 200	3nm	2026	GUC
Meta	MTIA 2	5nm	2026	AVGO

Source: Cmoney, Team Analysis

FIGURE 11: Data Center ASIC TAM Forecast



Source: MediaTek, Team Analysis

FIGURE 12: Acquisitions Comparison by Segments

Technology	Firm	Acquisitions since 2014	Disclosed Value Sum
Smartphone	MediaTek	3	318.72M
	QCOM	6	incomplete
Smartedge	MediaTek	2	80.21M
	AVGO	5	incomplete
PMIC	MediaTek	2	884.62M
	QCOM	3	incomplete

Source: Bloomberg, Team Analysis

Competitive Positioning

MTK Challenges QCOM Dominance in Flagship Market

In the premium smartphone segment, Qualcomm maintains leadership through its strategic partnership with Samsung's Galaxy S series (dual sourcing with Exynos) and enhanced CPU capabilities via Nuvia's Oryon architecture. MediaTek, as a challenger, leverages competitive advantages including cost-effective ARM standard core licensing versus Qualcomm's architectural license, enabling 15-20% pricing advantages for D9400 over Snapdragon 8 Elite. Additionally, MediaTek's deep understanding of Chinese market dynamics and recent penetration into Samsung's high-end tablet supply chain positions it favorably for market expansion beyond China (Figure 9) (Appendix B-7) (Appendix B-8).

MTK Drives 5G Mainstream Dominance

MediaTek dominates the mid-to-low-end segment with 39% market share versus Qualcomm's 25.7% (Canalys 1Q24), competing against UNISOC's 4G solutions and Huawei's emerging 5G presence (Appendix B-9). The company's leadership stems from localized R&D capabilities serving Chinese OEMs and early 5G deployment in mid-range platforms, positioning it favorably for continued market expansion amid accelerating 5G adoption.

AI Smartphone Ecosystem

The emergence of AI smartphones has catalyzed a restructuring of the mobile ecosystem into three distinct segments - Apple Intelligence, Global Android (Samsung, Google), and Chinese Android (Xiaomi, Vivo) ecosystems - where upstream IP provider ARM supplies specialized xPU IP for AI computing capabilities through licensing fees, powering MediaTek's Dimensity 9400 (standard architecture), Qualcomm's Snapdragon 8 Elite, and Apple's A18 Series (custom ARM-licensed architecture). TSMC maintains dominance in AI smartphone SoC production with advanced nodes (4nm/3nm), while Samsung faces yield challenges. Within the Chinese Android ecosystem, MediaTek collaborates with OEMs deploying in-house language models (Vivo's Blue LM, Oppo's AndesGPT) and third-party applications. We identify three critical success factors for MediaTek's competitive positioning: ARM's standard architecture performance advancement, TSMC advanced node partnership, and Chinese OEM ecosystem integration capabilities - which will collectively determine both user experience and market competitiveness (Appendix B-10).

Rising Edge in WiFi-7, Automotive, and ASIC

Connectivity: In the Wi-Fi technology sector, MediaTek competes against two primary rivals: Qualcomm, which leverages its Fast Connect platform across Wi-Fi 6-7 technologies and dominates the consumer electronics segment through integrated SoC solutions, and Broadcom, which focuses on premium enterprise networking solutions. MediaTek leverages its strengths in solution integration, cost-effectiveness, and multi-market strategy to compete against Qualcomm's premium focus and Broadcom's enterprise specialization.

Automotive: MediaTek's Dimensity Auto platform targets smart cockpits. Its CT-X1 chip, the world's first 3nm smart cockpit solution, delivers a 30% performance boost over Qualcomm's Snapdragon 8295, positioning MediaTek to challenge Qualcomm's dominance. Collaborating with NVIDIA, MediaTek plans to launch L2–L3 autonomous driving chips by 2025–2026, aiming to capture 5%-8% of the automotive chip market by 2028. Qualcomm, with its Snapdragon Ride platform covering L2+ to L5 autonomous driving, maintains a 70% share of the smart cockpit market and is projected to achieve a 10%-12% overall automotive chip market share by 2028.

Data Center ASIC: Broadcom and Marvell lead the AI ASIC market, jointly holding over 60% share, serving major CSPs such as Google (TPU), Meta (MTIA), AWS (Inferentia/Trainium), and Microsoft (Maia/Cobalt) (Figure 10). Broadcom excels in front-end design and end-to-end ASIC production, commanding premium pricing and 70% gross margins. Marvell operates similarly, with strong front-end design capabilities. MediaTek differentiates itself with advanced 112G/224G SerDes IP, comprehensive design expertise, and a close partnership with TSMC for turnkey solutions (Figure 11). According to our channel check, MediaTek has won Google's TPU v7 order, likely for SerDes and back-end design. Although mass production is postponed to 1Q26, the project is expected to generate $US1 billion revenue that year.

TI's Aggressive Pricing Reshapes the PMIC Battlefield

IDM players dominate 70% of the PMIC market, with IC design firms like MediaTek holding 30%. MediaTek's strengths include 1) cost-effective PMIC-SoC integration to streamline OEM workflows, (2) tailored solutions for China and India via local partnerships, and (3) expansion into automotive and industrial automation. Its bundle strategy integrates PMICs with SoCs for efficient solutions in smartphones, PCs, IoT, and automotive. Qualcomm employs a similar model, while Texas Instruments (TI) focuses on standalone PMICs, leveraging in-house fabs to ensure supply stability. TI's aggressive pricing strategy, particularly in industrial and automotive segments, has intensified market competition.

Strategic Acquisitions Expanding IC Product Portfolio

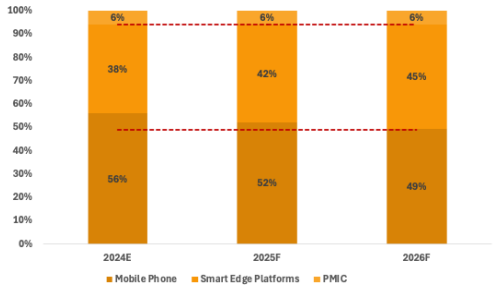
Strategic M&A has shaped the competitive landscape significantly over the past decade. MediaTek's acquisitions have strategically enhanced its technology portfolio: Richtek (2015) for PMIC expertise, Airoha (2017) for wireless communications, and Intel's Enpirion PMIC business (2020) via Richtek, strengthening its DC/DC solutions for data center applications (Figure 12). Broadcom's transformation through strategic acquisitions includes LSI Logic (2014) for ASIC capabilities, its merger with Avago (2016), Brocade (2016) for data center networking, Cypress (2019) for IoT expansion, and VMware (2022) for software integration. Qualcomm's strategic purchases of CSR (2015) and Nuvia (2021) have bolstered its IoT, automotive, and proprietary CPU architecture capabilities, reducing ARM dependency.

Investment Summary

Diversify with Expanding AI Exposure in Cloud and Edge Computing

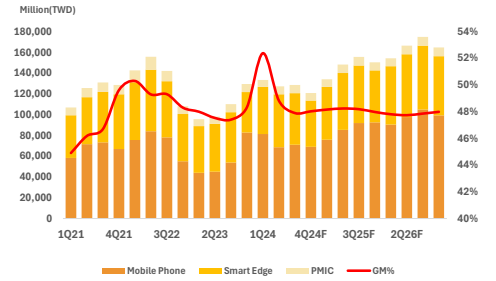
As generative AI advances, CSPs are actively developing proprietary ASICs to optimize computational costs against NVIDIA's dominance. This shift presents significant opportunities for IC design service providers, with MediaTek leveraging its robust front-end and back-end design capabilities, proprietary 112G/224G Serdes IP, and established TSMC partnership for advanced node turnkey services. According to our channel check, MediaTek has secured Google TPU v7 orders, positioning it for expansion in the Data Center ASIC segment. As cloud AI training demand grows, on-device computing emerges as the high-potential growth vector, with AI smartphones and AIPCs leading mass commercialization, followed by automotive and wearable device integration. MediaTek is positioned to capitalize on this trend through its NVIDIA collaboration for automotive cockpit platforms and ARM-based AIPC development, reducing smartphone dependency while increasing AI exposure across cloud and edge computing domains (Figure 13).

FIGURE 13: MediaTek Product Mix Forecast



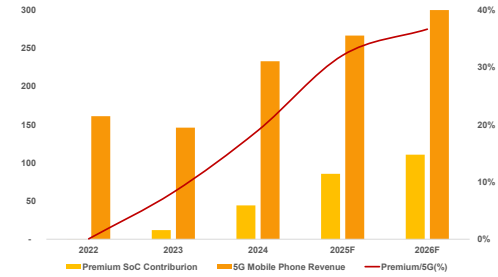
Source: IDC, Team Analysis

FIGURE 14: Revenue Breakdown Quarterly



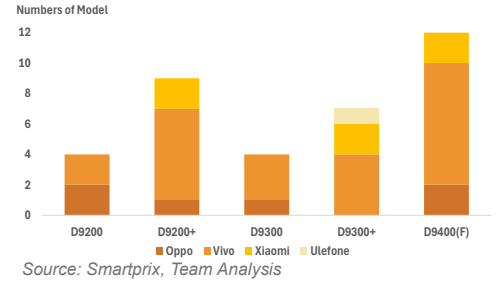
Source: MediaTek, Team Analysis

FIGURE 15: Flagship Contribution to 5G Mobile



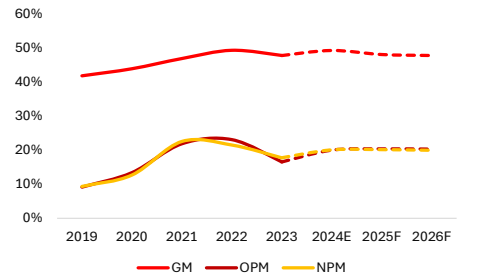
Source: Bloomberg, Team Analysis

FIGURE 16: Smartphone Equipped with D9000



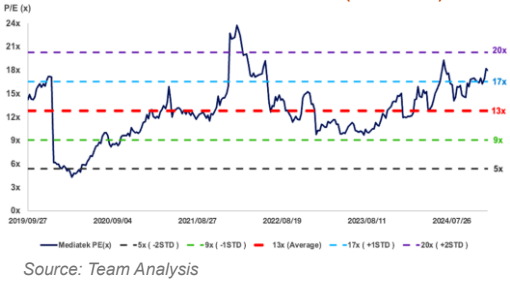
Source: Smartprix, Team Analysis

FIGURE 17: Margin Breakdown



Source: MediaTek, Team Analysis

FIGURE 18 Forward P/E Band (2019~2024)



Source: Team Analysis

Gaining Flagship Market Share from Qualcomm

As smartphones become the primary edge computing devices, with NPU integration focused in premium segments, MediaTek positions to challenge Qualcomm's dominance via three advantages: (1) The Dimensity 9400's 15-20% price advantage over Snapdragon 8 Elite amid China's “consumption down-grading” trends, (2) Qualcomm's ongoing disputes with ARM create uncertainty around Oryon architecture development, while MediaTek's adoption of ARM's latest reference architecture potentially narrows the performance gap with Oryon, and (3) strong relationships with Chinese OEMs and third-party developers enhancing its AI smartphone ecosystem position. MediaTek projects to reach a short-term peak of 20% flagship SoC market share by 2025, with further growth depending on securing Samsung S Series contracts.

Strong Outlook in Revenue and EPS Driven by Flagship Market

We forecast MediaTek to maintain robust growth through 2024-26, with revenues of NT$524/603/699 billion (YoY 20.80%/15.08%/15.95%) (Figure 14). This outlook is driven by three catalysts: (1) Dimensity 9400's superior price-performance ratio (15-20% price advantage over Snapdragon 8 Elite) should enable MediaTek to expand its presence in the flagship segment (Figure 15) (Figure 16). (2) New growth drivers including NVIDIA co-developed automotive cockpit solutions and ARM-based AIPC chips, also the data center ASIC project will contribute meaningfully starting 2H25. (3) MediaTek's competitive position in WiFi has strengthened with WiFi 7, with momentum expected through 2025 amid broader networking market recovery. Gross margins are expected to decline to 49.51%/48.10%/47.24% from 2024 to 2026 as MediaTek adjusts pricing strategies to remain competitive in new markets (Figure 17). This approach aims to capture market shares while sustaining its revenue and earnings, as reflected in EPS projections of NT$68.41/77.51/84.92 (YoY 40.99%/13.30%/9.56%) over the period.

Steady Non-Operating Income and Business Growth driven by Investments

Along with investing the substantial cash reserves that accumulated from Fabless model, MediaTek enhances horizontal and vertical integration in its chip business through subsidiaries and equity investments. These investments strengthen its core business and provide stable non-operating incomes.

Valuation: Three Growth Factors Driving Multiple Expansion

We have set MediaTek’s target price at NT$1,628 per share (P/E of 21x) (Figure 18) with a BUY rating, representing a 15.05% upside from the closing price of NT$1,415 on December 31, 2024. This target price is based on our assessment of MediaTek’s EPS growth and business prospects, using relative valuation (Forward P/E) as the primary method, supplemented by PEG adjustments and absolute valuation (DCF). Based on our positive outlook for MediaTek’s three key growth drivers and the 2025 EPS forecast NT$77.51, we have set a target price of NT$1,628 per share using a forward P/E multiple of 21x. Our DCF model also indicates a similar target price of NT$1,633.

In the DCF model, we categorized end products into four segments (smartphone, smart home, IoT/computing and ASIC, and PMIC) and capitalized R&D expenses to more accurately reflect their long-term value. For terminal growth rates, we assigned 3% to the IoT, computing, and ASIC segments, as future growth is expected to be driven primarily by AI and data centers. Meanwhile, mature markets such as smartphones, smart home, and PMIC were assigned a 2% growth rate to reasonably reflect their long-term impact on overall value.

ESG: Strong Social Performance, Demonstrating Sustainability

Our ESG analysis reveals that the social aspect is the most influential, followed by governance and environmental factors. **Social**: MediaTek has a young, specialized workforce (68.7% under 40, 82% with a master’s degree or higher, and nearly 90% in R&D roles). The company emphasizes workplace diversity, talent retention, and competitive pay, with women comprising 20% of employees and a turnover rate below the industry average. These initiatives boost innovation, productivity, and cost efficiency, enhancing financial and managerial performance. **Governance**: In 2023, MediaTek appointed a female independent director, increasing independent directors to 50%, which exceeding government requirements. MediaTek also leads in cybersecurity, earning the TCSA Cybersecurity Leadership Award twice and TISAX certification, underscoring its excellence in the field. **Environmental**: Despite increasing energy consumption, water usage, and GHG emissions, MediaTek improved energy efficiency through data center optimization and LED upgrades, keeping carbon intensity below 0.21 CO2e/million.

Risk: A Jungle Out There: Stay in a Cutting-Edge IC Colosseum

Given the limited potential for significant shock from various risk sources, we are initiating a BUY recommendation. The rise in protectionist policies is not only intended to provide more support for domestic semiconductor industries, but also to encourage customers to diversify their supply chains away from Asia, which could adversely affect MediaTek's orders as a result of geopolitical tensions.

The smartphone market, MediaTek’s key revenue driver, is nearing saturation, challenging future growth. To counter this, MediaTek is diversifying its portfolio with products like Dimensity Auto, WoA AIPC chips, and data center ASICs. However, the success of these products is uncertain. For instance, WoA AIPCs face compatibility issues with x86-based systems, which may limit its market share, while adoption of other new products could be slow due to strong competition.

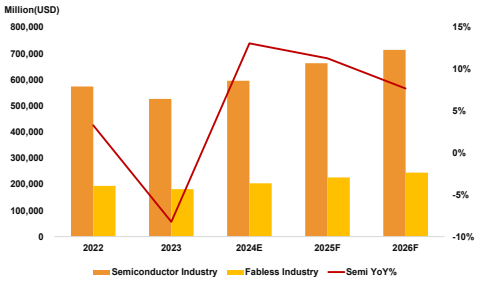
Financial Analysis

MTK Key Financials (Million, NTD)	FY21A	FY22A	FY23A	FY24E	FY25F	FY26F
Revenue	**493,415**	**548,796**	**433,446**	**523,594**	**602,560**	**687,781**
R&D Intensity	19.47%	21.30%	25.70%	24.20%	24.00%	24.00%
EPS	**70.60**	**74.62**	**48.52**	**68.41**	**77.51**	**83.98**
Dividend per Share	37.10	73.33	76.24	55.05	54.73	62.01
Payout Ratio	52.55%	98.27%	157.12%	80.47%	70.61%	73.83%
PROFITABILITY RATIOS						
Gross Margin(%)	**46.94%**	**49.36%**	**47.84%**	**49.51%**	**48.10%**	**47.31%**
EBITDA Margin(%)	27.89%	27.48%	24.30%	27.46%	26.74%	25.34%
EBIT Margin(%)	25.74%	24.75%	20.10%	23.46%	22.92%	21.74%
NI Margin(%)	**22.67%**	**21.62%**	**17.81%**	**20.90%**	**20.57%**	**19.51%**
ROE(%)	27.55%	26.95%	18.84%	28.03%	29.37%	29.33%
ROIC(%)	24.71%	24.63%	16.86%	24.47%	25.54%	25.72%
LEVERAGE AND LIQUIDITY						
Total Debt/EBITDA(x)	0.41	0.05	0.12	0.20	0.18	0.17
D/E(%)	52.40%	37.32%	69.70%	68.85%	81.53%	78.95%
Current Ratio	1.64	2.10	1.25	1.26	1.26	1.32
REVENUE BREAKDOWN						
Mobile Phone	270,262	293,099	226,009	292,902	314,605	328,946
Smart Edge	187,533	214,297	178,391	200,609	251,357	316,820
Power IC	34,539	41,400	29,046	30,082	36,598	42,015

Source: MediaTek, Team Analysis

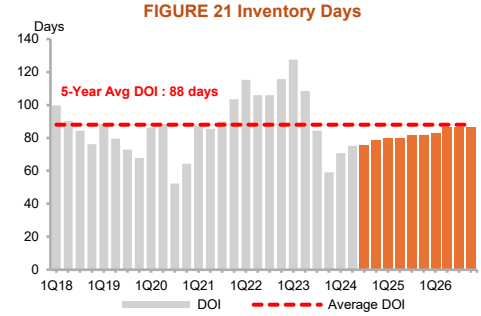
FIGURE 19: MediaTek’s Key Financials

FIGURE 20 Revenue Breakdown Annually



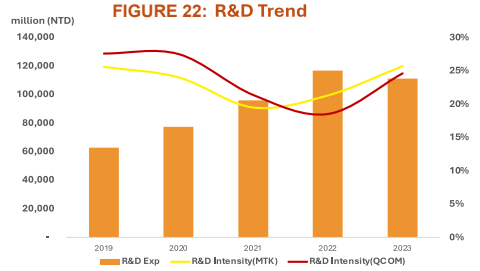
Source: MediaTek, Team Analysis

FIGURE 21 Inventory Days



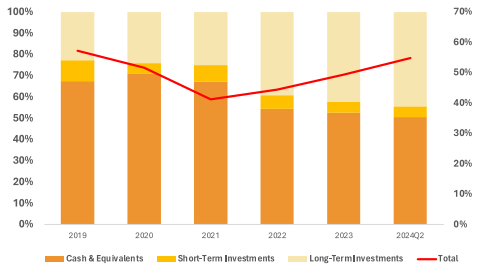
Source: MediaTek, Team Analysis

FIGURE 22: R&D Trend



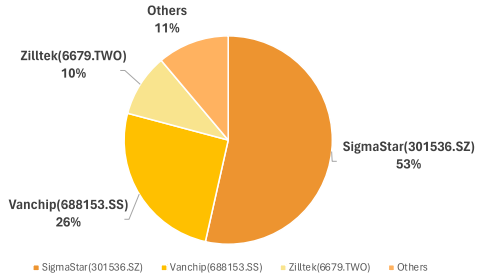
Source: MediaTek, Team Analysis

FIGURE 23: Cash and Financial as % of Total Asset



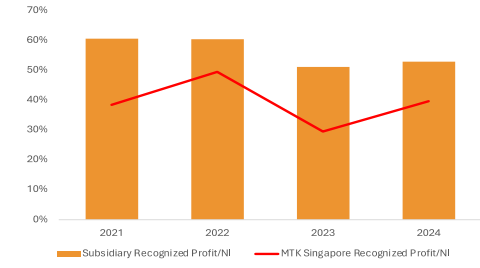
Source: MediaTek, Team Analysis

FIGURE 24: 2Q24 LT Investment at Equity



Source: MediaTek, Team Analysis

FIGURE 25: Subsidiary Recognized Profit



Source: MediaTek, Team Analysis

We project (Figure 19) MediaTek's revenue to reach NT$524/603/699 billion for 2024/25/26 (YoY growth of 20.8%/15.08%/15.95%), driven by three key catalysts. (1) The upcoming flagship chip D9400 is expected to expand market share in the premium segment, (2) The maturation of WiFi 7 product lineup coincides with a networking market recovery, providing stable revenue streams (Figure 20). (3) Long-term growth drivers including automotive cockpit solutions, ARM-Based AIPCs, and data center ASICs are poised to gain momentum starting in 2H25.

Dimensity 9400: Challenging Qualcomm's Flagship Dominance

After bottoming out in 2023, the smartphone market shows recovery signs with China's Q4 shipments growing 1.1% YoY, driving MediaTek's revenue rebound and inventory improvements (Figure 21). Looking ahead to 2025/26, Dimensity 9400 has secured more design wins than D9300, strengthening MediaTek's flagship presence. We project flagship SoC market share to reach a cyclical peak of 20% in 2025/26, translating to shipment volumes of 19/20 million units. According to TSMC, 2024 quotation in advanced node pricing for 2025 production by TSMC increases from 5% to 10%, especially for sub-4nm processes. We then estimate D9400/9500 ASPs at USD150/160. With consideration of the growth of all series, we forecast Mobile Phone segment revenue at NT$293/315/346 billion for 2024/25/26, projecting YoY growth trajectories of 29.60%/7.41%/9.95%.

Strategically Shifting to Diversify Revenue Streams

Smart Edge: In the connectivity segment, MediaTek has capitalized on rising Wi-Fi 7 penetration rates, securing design wins from multiple Tier 1 telecom operators in North America and Europe through its Wi-Fi 7/10G PON integrated solution partnership with Airoha. Meanwhile, the ongoing expansion of 5G FWA infrastructure by telecom operators in North American and emerging markets is expected to contribute to Smart Edge revenue streams.

Long-term growth drivers include collaborations with NVIDIA on automotive platform chips and ARM-based AIPC chips, alongside the development of Data Center ASICs, all of which are expected to contribute significantly to revenue starting in 2H25. The D9000+ series continues to expand in the electric vehicles (EV) and tablet markets, driving Smart Edge segment revenue. We forecast Smart Edge segment revenue at NT$201/251/310 billion for 2024/25/26, with projected YoY growth of 12.45%/25.30%/23.37%.

PMIC: MediaTek's Power ICs, which are bundled with SoCs for smartphones and PCs, face intense pricing competition from Texas Instruments. As a result, we expect PMIC shipment growth to lag behind overall smartphone and PC market growth, though recovery in consumer demand should provide some support. We forecast PMIC segment revenue of NT$30/37/43 billion for 2024/25/26 (YoY growth of 3.57%/21.66%/16.63%).

Sustaining High Margins Through Improved Product Mix

In 2023, MediaTek's cost structure comprised COGS at 52.16% of revenue, R&D at 25.7%, and SG&A at 5.57%. Within COGS, wafer manufacturing and packaging/testing costs represent 80%, with node selection significantly impacting overall costs. Despite TSMC's capacity expansion, unprecedented AI demand has created a supply-demand imbalance that is expected to persist for 12 months. Given TSMC's dominant position, we anticipate a 5%–10% price increase in advanced node and packaging, with sub-4nm processes likely reaching the higher end of this range. However, MediaTek should be able to pass these costs to customers given its technological leadership and the industry-wide nature of these increases.

MediaTek is elevating its market position with Dimensity 9400's launch expanding flagship smartphone market share, while simultaneously diversifying into automotive and Data Center ASIC businesses in 2025/26. We project Mobile Phone segment revenue contribution to decline from 55.9% in 2024 to 49.5% in 2026, while gross margins are expected to maintain at historically high levels of 49.51%/48.10%/47.24% for 2024/25/26, despite a slight decrease aimed at maintaining price competitiveness in new markets.

Operating Efficiency: R&D-Driven Growth with Enhanced DOL

MediaTek demonstrates robust operating performance amid intensive R&D requirements, with operating income projected to reach NT$259/290/330 billion in 2024/25/26. The company maintains R&D intensity of 20-25% over the past five years, translating to forecasted R&D expenses of NT$127/145/168 billion for 2024/25/26 (Figure 22). This substantial fixed cost base, primarily driven by R&D investments in emerging segments like WoA PCs, automotive, and Data Center ASICs, results in a degree of operating leverage of 50% through 2024-2026. The strategic diversification beyond smartphone dependence, coupled with high operating leverage, positions MediaTek to capture accelerated profit growth as revenue scales across new product lines. We expect this R&D-intensive model to continue strengthening MediaTek's competitive moat while maintaining stable operating margins through effective cost management and product mix optimization.

Balance Sheet Summary

As a fabless semiconductor company, MediaTek exhibits a distinctive balance sheet structure that emphasizes intellectual property and R&D investments over fixed assets. The company maintains robust liquidity with 52.5% of total assets (Peers Average: 67.7%) distributed across cash equivalents (27.8%) (Peers Average: 31.4%), short-term investments (2.7%) (Peers Average: 2.4%), and long-term financial instruments (22%) (Peers Average: 33.8%). Its growth-oriented acquisition strategy is reflected in intangible assets comprising 12% of total assets, with 80% stemming from acquisition-derived goodwill. MediaTek's conservative financial strategy, marked by a 0.7x debt-to-equity ratio (Peers Average: 0.7x) and 1.25x current ratio (Peers Average: 1.5x), ensures continued R&D investment capability while maintaining strategic flexibility for acquisitions in the competitive IC design sector.

Inventory Analysis

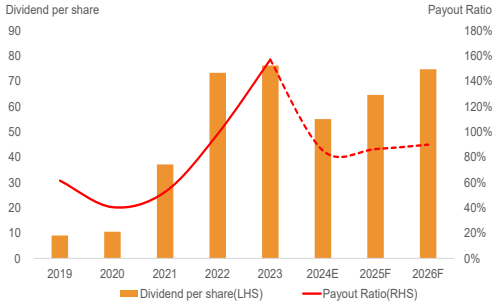
Inventory management remains a critical determinant of MediaTek's gross margin performance in the IC sector, where short product cycles heighten write-down risks. The company's inventory turnover days increased significantly in 2022 (115 days) during the semiconductor industry's supply chain reorganization from long to short chains amid the pandemic, resulting in inventory destocking and margin compression in 2023 (GM 47.84%). Although destocking continues across the IC industry, whose days of inventory (DOI) fell from 165 days in 3Q22 to 117 days in 3Q24, with an expected value of 100 days in 3Q26, channel inventory has been accumulating since 2022, reaching 187 days in 3Q24 compared to the five-year average of 177 days, especially in AI-related product market. Consequently, we expect MediaTek's DOI to gradually return to a healthy level, staying below 90 days (Figure 21).

FIGURE 26: Peer's Key Financial Ratios

Region	Taiwan		US	
Company	Mediatek	Realtek	Qualcomm	Broadcom
Ticker	2454.TW	2379.TW	QCOM	AVGO
TTM(4Q23-3Q24)				
Sales Growth	26.70%	16.19%	8.77%	69.93%
GPM	49.61%	49.74%	56.22%	63.53%
OPM	20.25%	10.74%	25.64%	26.10%
NPM	20.86%	12.84%	25.95%	11.96%
R&D Intensity	24.08%	29.96%	22.83%	18.05%
3Q24				
ROE	6.04%	9.75%	11.15%	6.50%
EPS($USD)	0.49	0.26	2.62	0.92
Current Ratio	1.25	1.32	2.65	1.04
D/E	60.00%	161.00%	111.00%	156.00%
Asset Turnover	19.48%	26.27%	18.57%	8.48%
Inventory Days	70.87	76.92	126.53	36.14
Receivable Days	35.43	50.56	26.03	40.36

Source: MediaTek, Team Analysis

FIGURE 27: Dividend Policy



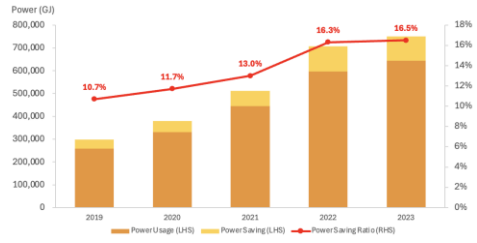
Source: MediaTek, Team Analysis

FIGURE 29: ESG Score Card

Provider	Avg.	Industry median	Envir.	Social	Gov.
Morning star	14.7 (Low Risk)		N/A	N/A	N/A
	22/370 (Industrial Rank)		N/A	N/A	N/A
MSCI (ESG Rating)	A (Average)	BBB	N/A	N/A	N/A
Bloomberg (ESG Rating)	5.86（Ahead）	3.5	5.88	5.85	5.46
S&P Global	42/ 100		43	40	44
Refinitiv	62		65	65	52
Sustainalytics	14.72(Low Risk)	19.03	N/A	N/A	N/A

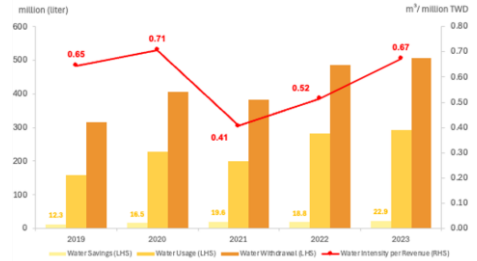
Source: MediaTek, Bloomberg, Team Analysis

FIGURE 30: Resource Management, Power



Source: MediaTek, Team Analysis

FIGURE 31: Resource Management, Water



Source: MediaTek, Team Analysis

Leveraging Low-Cost Capital for Stable Returns

Following its fabless business model, MediaTek maintains a conservative debt ratio of 41.07% in 2023, consistently below 45%, to mitigate new product development risks. With minimal PPE and right-of-use assets (8.03% of total assets in 2Q24) and limited CAPEX needs, the company demonstrates strong cash generation capabilities. MediaTek capitalizes on Taiwan's low interest rate environment by borrowing at 1.8% (2023) and investing in higher-yielding overseas instruments, generating stable non-operating income (Figure 23).

Synergistic Investments Fueling Growth and Profitability

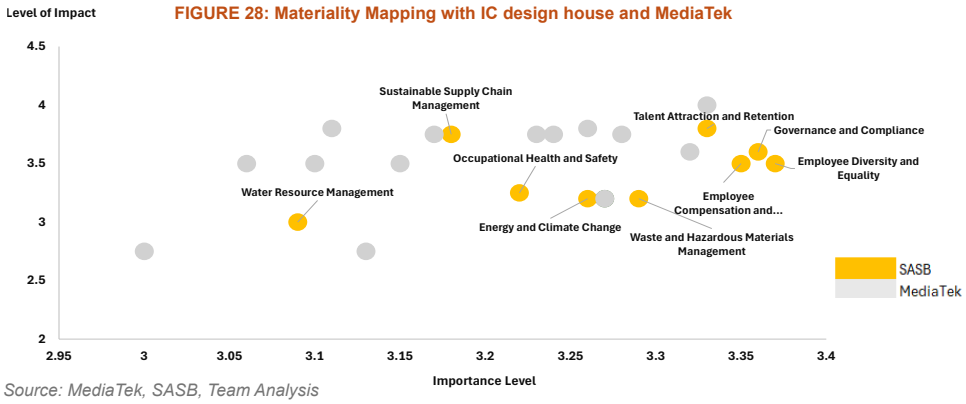
MediaTek leverages its subsidiaries and equity investments for chip business integration. As of 2Q24, its top equity investments (SigmaStar, Vanchip, Zilltek) contributed NT$194 million to non-operating income (4.56%) (Figure 24). Its key subsidiaries (MediaTek Singapore, MediaTek Investment Singapore, Richtek, Airoha) contributed 53% of net income, with Singapore entities holding most overseas operations and providing 51% of net income (MediaTek Singapore alone contributing 40%) (Figure 25). These strategic investments enhance both financial performance and market presence by expanding customer reach and product offerings.

Consistent ROE and Dividends: A Formula for Stability

MediaTek maintains a strong financial structure with a D/E ratio of 0.6, below Qualcomm's 1.11, and is expected to remain around 0.7 through 2026, providing flexibility for acquisitions and R&D expansion (Figure 26). With stable operations and consistent non-operating income, the company is poised to deliver a ROE of 26-27% from 2024 to 2026. Minimal CAPEX requirements enable an 80% dividend payout ratio, ensuring reliable shareholder returns (Figure 27).

ESG Analysis

FIGURE 28: Materiality Mapping with IC design house and MediaTek



Source: MediaTek, SASB, Team Analysis

After comparing the materiality indicators in MediaTek's sustainability report with SASB's key metrics for the semiconductor industry, we identify MediaTek's focus areas as: (1) Environmental: energy management, water resource management, waste management; (2) Social: employee health and safety, engagement, diversity, and inclusion; (3) Governance: competitive behavior.

Based on evaluations from multiple third-party institutions, MediaTek displayed solid overall performance and has received wide recognition. Sustainalytics rated it as low risk, highlighting supply chain and labor rights as key risks, but noting that risk management is well developed. MSCI gave an "A" rating, above the industry average. It received a 42/100 rating from S&P Global for improved governance and environmental management. Bloomberg rated MediaTek as "Ahead" for its proactive ESG efforts (Figure 29).

Environment Sustainability: Ongoing Environmental Efforts

Energy Management｜Eco-Friendly Commitment:

(1) Power Management: In 2023, MediaTek's electricity consumption reached 178.771 GWh, up 8%, with an energy-saving ratio increasing from 10.7% (FY19) to 16.5% (Figure 30).

(2) Greenhouse Gas Management: Scope 2 electricity emissions accounted for 95.67% of total emissions, rising from 51,080 tons (FY19) to 92,300 tons (FY23), while carbon intensity remained under 0.21 CO2e per million units (Appendix C-1).

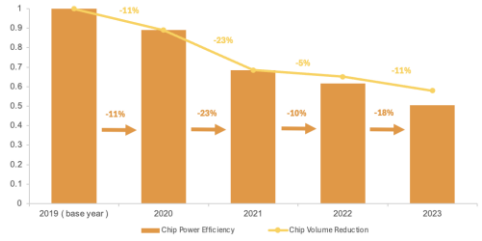
(3) Water Resource Management: Despite water-saving efforts, water usage has increased since 2020 due to business growth, with no environmental impact from treated wastewater. In 2023, MediaTek saved 20.3 million kWh through data center optimization and plans to introduce immersion cooling by 2025. Solar power generation reached 910,000 kWh, with four more plants planned by 2024. The company aims for net-zero emissions by 2050 and 100% renewable energy in global offices by 2030 (Figure 31).

(4) Waste Management：MediaTek, the first Hsinchu Science Park company to install recycling machines, improved waste management over the past five years. The recycling rate rose from 21% in FY19 to 55% in FY23, with waste per million in revenue steady at 0.03–0.04 tons (Appendix C-1).

Supply Chain Management｜Implementing Net-zero Pathway: MediaTek actively promotes a sustainable supply chain and prioritizes local sourcing. Beyond selecting suppliers based on ESG evaluation criteria, MediaTek collaborates on projects such as green manufacturing and circular economy initiatives to reduce environmental impact. In 2023, the lowest score among key suppliers rose from 64 to 77, with an average score of 82, and 100% compliance with ESG standards. In addition, MediaTek co-developed the "Supplier Net-Zero Roadmap," which aims to reduce greenhouse gas emissions by 25% by 2030 (Appendix C-1).

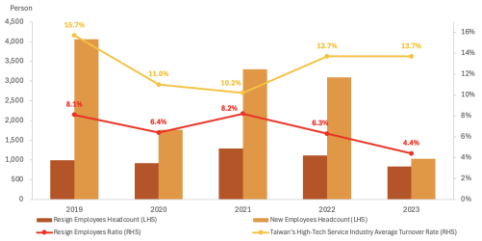
IC Green Innovation｜Focused On Optimizing Chip Energy Efficiency: MediaTek is committed to miniaturizing chips with reduction of product energy consumption. Through architecture optimization, algorithm refinement, and advanced processes, it continuously minimizes chip size and energy usage, reducing environmental impact. In 2023, key product energy consumption dropped by 18% compared to 2022, saving 360 million kWh annually and cutting 177,840 tons of CO2e emissions. By reducing chip size at the disposal stage, waste was reduced by 16,830 kg, reducing 35 tons of carbon emissions (Figure 32).

FIGURE 32: IC Green Innovation



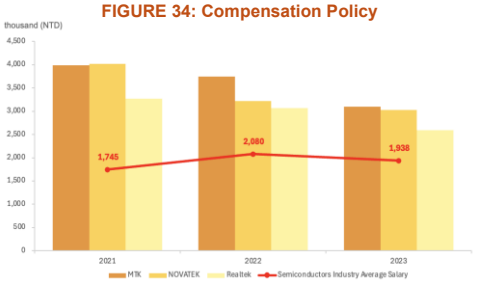
Source: MediaTek, Team Analysis

FIGURE 33: Human Resources Management



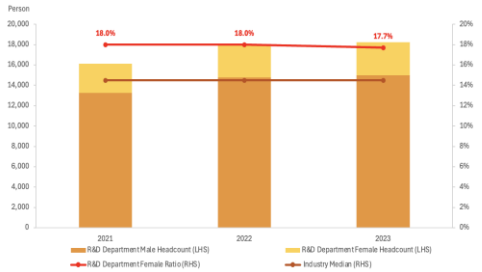
Source: MediaTek, Team Analysis

FIGURE 34: Compensation Policy



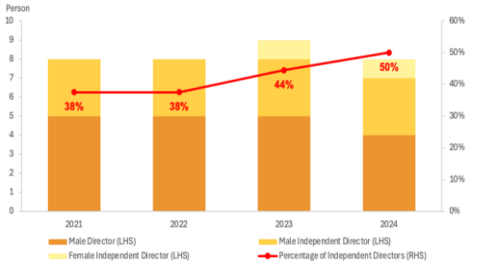
Source: MediaTek, NOVATEK, Realtek, Team Analysis

FIGURE 35: Gender Distribution



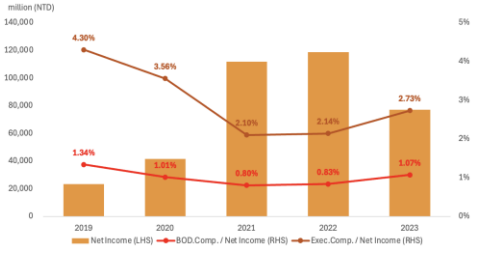
Source: MediaTek, Team Analysis

FIGURE 36: Board Composition



Source: MediaTek, Team Analysis

FIGURE 37: Board and Management Compensation



Source: MediaTek, TEJ, Team Analysis

Social Responsibility: Talent Is The Core Asset

Human Resources Management | Talent Is Key To Growth: In 2023, MediaTek employed 20,300 staffs globally, including 1,028 new hires. With 68.7% of the workforce under the age of 40, 82% holding advanced degrees, and nearly 90% in R&D roles, reflecting a young, specialized workforce. MediaTek prioritizes talent development and retention, increasing average annual training hours from 6.93 (FY19) to 37 (FY23) (Appendix C-2). It also offers tailored training and an internal job rotation mechanism. The 2023 employee turnover rate was 4.4%, below Taiwan's high-tech industry average (Figure 33). The two-year retention rate improved from 92% to 98% with the three-year retention rate from 91% to 94% (Appendix C-2).

Compensation Policy | Industry-Leading Performance: MediaTek attracts global talent through innovative recruitment and competitive compensation. It offered a 2023 median salary of NT$3,094K for full-time non-managerial employees—surpassing Novatek (NT$3,028K), Realtek (NT$2,593K), and the industry average NT$1,938K, maintaining its industry-leading position (Figure 34). It also provides above-standard benefits, such as flexible leave and subsidies, underscoring its commitment to well-being of employees.

Gender Distribution | Gender-Friendly Workplace: MediaTek promotes a supportive workplace through transparent communication and social platforms. Despite headcount growth, female representation has remained steady at 19-20% over five years, with an increasing number of female managers. In R&D, the female ratio is around 18%, above the industry median of 14.5% (Figure 35). In 2023, MediaTek launched the "*Girls! TECH Action*" workshop, inspiring young women to explore tech careers and reinforcing its commitment to diversity and nurturing female talent.

Disabling Occupational Injury | Creating A Safe Work Environment: MediaTek ensures employee well-being through health programs, counseling, and life services, achieving a zero-harm workplace. Over five years, it reported no occupational diseases, with an FSI (Frequency-Severity Indicator) below the Science Park average (Appendix C-2), reflecting its commitment to safety and health.

Governance Framework: Key Indicators Are Solid

Board Composition | Gender Diversity Has Room To Improve: Compared to previous years, MediaTek appointed a female independent director in 2023, increasing the proportion of independent directors from 38% (FY19/FY20) to 50% (FY24). This has enhanced the board's diversity, independence, and overall governance. While MediaTek has met government regulations on gender diversity ahead of schedule, there is still a room for improvement compared to the global benchmark (Figure 36).

Shareholder Composition | Shareholding Structure Remains Stable: (Appendix C-3)

(1) Board and Supervisors: Holding steady at 2.9% over the past five years, reflecting a stable corporate governance structure.

(2) Foreign, Financial, and Institutional Investors: Holding at 76.6%, showing consistent confidence in MediaTek's long-term growth prospects.

(3) Major Shareholders: Holding at 5.6%, with a brief dip to 4.4% in 2020, indicating sustained support and confidence in the company's future development.

Board and Management Compensation | Compensation Structure Gradually Optimized: Since 2019, MediaTek's net profit surged from NT$23 billion to NT$77 billion in 2023. However, board compensation as a percentage of net profit dropped from 1.34% to 1.07%, and management compensation decreased from 4.3% to 2.73%, remaining stable over the past three years, indicating a focus on shareholder interests and optimized compensation structure (Figure 37).

Information Security Management | Outstanding Performance: MediaTek's Information Security Committee meets semi-annually, which strengthens endpoint and cloud protection since 2020 through red team exercises. It supports the AIS3 cybersecurity program, holds TISAX certification, and has won the TCSA Cybersecurity Leadership Award twice, highlighting its industry leadership.

ESG Suggestion and Integration

ESG Suggestion: MediaTek excels in social responsibility with low turnover, high retention, and a safe and gender-diverse workplace. Comprehensive training, competitive rewards, and diverse benefits drive innovation and efficiency, which, in turn, improve financial and managerial performance. To support growth, optimizing water efficiency and recycling is recommended. Strengthening board diversity with more female and varied-background directors could further enhance decision-making inclusivity and independence.

ESG Integration: To reflect equity value, we incorporated the SPICE valuation model (Appendix C-4), incorporating stakeholder value into MediaTek's stock price. MediaTek outperforms the industry median and global top 10 IC design companies in environmental and social scores but lags in governance, with a score of 56, due to board diversity and shareholder rights. Through the SPICE model, MediaTek's ESG score was calculated at 3.2, warranting a 5% P/E premium, raising its P/E to 22x. The ESG-adjusted price has an extra upside of 4.73%, increasing the stock price to NT$1,705 from NT$1,628 in the normal case. Ultimately, the higher valuation reflects MediaTek aggressive execution on ESG (Appendix C-5).

Valuation

Valuation Overview

We have set MediaTek's target price at NT$1,628 per share, representing a 15.05% upside from the closing price of NT$1,415 on December 31, 2024. Our valuation is based on an assessment of MediaTek's growth potential, utilizing relative valuation (Forward P/E) as the primary method, supplemented by absolute valuation (DCF). Furthermore, we incorporated PEG and Monte Carlo analyses to determine the stock's fair value range and assess risk levels, offering a more comprehensive reflection of its future earnings growth potential and intrinsic value.

Relative Valuation-P/E Multiples

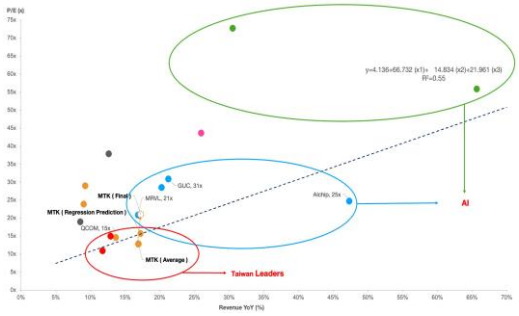
We utilized Forward P/E to better reflect market expectations for future profitability. Relying solely on historical P/E multiples may cause valuation bias, especially in high-growth and volatile sectors like tech and semiconductors, where it fails to capture future potential. Therefore, we analyzed the relationship between revenue YoY and P/E multiples of the top 10 global IC design companies, as well as representative Taiwanese ASIC manufacturers (Figure 38). Additionally, we used the PEG ratio to ensure the stock price reasonably reflects future growth expectations through the P/E multiple (Figure 39).

FIGURE 38: Top 10 IC Design Companies Over Past Three Years

Top 10 IC Design Company and representative Taiwanese ASIC Company	Category	Color	Average P/E	Average YoY	EPS CAGR
Taiwan					
MediaTek	Smartphone SoC	Orange	13x	16.96%	20.37%
Realtek	Fabless Leader in TW	Red	15x	12.95%	28.49%
Novatek	Fabless Leader in TW	Red	11x	11.75%	1.11%
Alchip	ASIC(AI)	Blue	25x	47.31%	47.20%
GUC	ASIC(AI)	Blue	31x	21.24%	24.36%
USA					
NVIDIA	GPU(AI)	Green	56x	65.67%	62.65%
QCOM	Smartphone SoC	Orange	15x	13.68%	12.35%
AVGO	ASIC(AI)	Blue	29x	20.29%	88.44%
AMD	GPU(AI)	Green	73x	30.51%	139.16%
AAPL	Smartphone SoC	Orange	23x	9.05%	14.72%
MRVL	ASIC(AI)	Blue	21x	16.90%	50.48%
MPWR	Power IC	Pink	44x	25.98%	34.36%
CRUS	Consumer IC	Gray	19x	8.56%	12.14%
China					
UNISOC	Smartphone SoC	Orange	29x	9.25%	18.40%
WILLSEMI	Consumer IC	Gray	38x	12.67%	32.05%

Source: Team Analysis

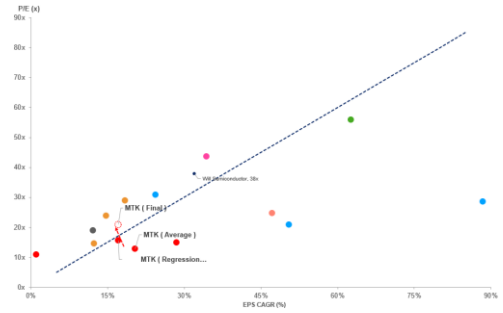
FIGURE 39: Revenue YoY VS. P/E Multiple (Top10 IC Company)



Source: Bloomberg, TEJ, Trading View, SEC US, Team Analysis

Note: Refer the company information represented by the pointes to Figure 34 with the corresponding color.

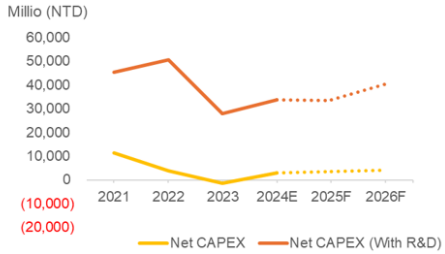
FIGURE 40: Adjusted by PEG



Source: Bloomberg, TEJ, Trading View, SEC US, Team Analysis

Note: Refer the company information represented by the pointes to Figure 34 with the corresponding color.

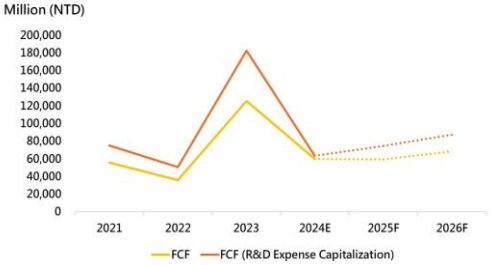
FIGURE 42: MediaTek's Net CAPEX *



Source: MediaTek,Team Analysis

*Adjusted Net CAPEX = Original Net CAPEX
+ R&D Expense
–R&D Amortization Amount

FIGURE 43: Free Cash Flow



Source: MediaTek, Team Analysis

Future Revenue Growth Drivers

We utilized Forward P/E to better reflect market expectations for future profitability. Relying solely on historical P/E multiples may cause valuation bias, especially in high-growth and volatile sectors like tech and semiconductors, where it fails to capture future potential. Therefore, we analyzed the relationship between revenue YoY and P/E multiples of the top 10 global IC design companies, and adjusted valuations using the PEG ratio to align with market growth expectations.

Short-Term: Short-Term: Growth will be driven by: (1) the D9400 chip boosts flagship market share, breaking Qualcomm's dominance in the high-end segment, and (2) networking products, benefiting from the Wi-Fi 7 upgrade cycle with increasing penetration, which, in turn, contribute stable revenues.

We forecast FY 24/25 revenue to reach 524/603 billion, with FY 24/25 YoY growth of 20.80%/15.08%. FY 24/25 EPS is projected at NT$68.41/77.51, with FY24/25 YoY growth 41.02%/13.30%.

Long-Term: MediaTek's long-term growth is primarily driven by its strategic expansion into AI applications. We are optimistic about its progress in key AI-driven segments, such as smart automotive cockpits, AI data centers, HPCs, and AIPCs. These segments are expected to gradually contribute to meaningful profit growth starting in FY26. This diversification helps offset the growth stagnation in smartphone sector while boosting overall profitability through high-growth opportunities. We forecast FY26 revenue to reach 699 billion, with FY25 YoY growth of 15.95% and EPS to reach NT$84.92, with FY25 YoY growth of 9.56%.

Driven by these three growth drivers, we project a 2023-2026 revenue CAGR and an EPS CAGR in 17.25% and 20.52%, respectively.

We believe MediaTek's current P/E multiple is undervalued, so we raised its target price to NT$1,628 per share by P/E 21x, above the five-year average. The reasons are as followed:

1. Revenue Growth vs. P/E Analysis and Valuation Adjustments

We analyzed the top 10 global IC design companies (Appendix D-1) over the past three years using a regression model with their five-year average revenue YoY and P/E multiples, controlling for the region as a dummy variable. The model, with an R^2 of 0.55, shows a strong relationship between revenue YoY and P/E multiples, and is adjusted using the PEG ratio to accurately reflect market expectations for future growth (Figure 40). The results indicate that MediaTek's average P/E of 13x is significantly lower than that of its peers, and thus suggest that MediaTek is undervalued.

We projected MediaTek's FY23-FY26 revenue CAGR and EPS CAGR at 17.25% and 20.52%, respectively, based on our FA model. Our regression model results a P/E multiple of 15.6x with a PEG ratio of 0.78. However, given the optimistic outlook for high-growth AI applications, including smart automotive cockpits and data centers, we adjusted the P/E multiple to 21x, resulting in a PEG ratio of 1.02. This revised valuation remains within a reasonable range, and accurately reflects the potential of AI-driven growth and the anticipated momentum in FY26 (Appendix D-2).

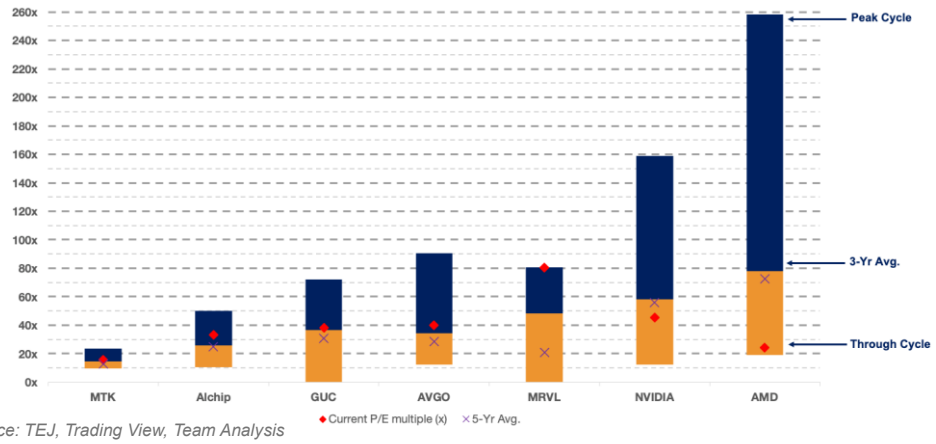
2. MediaTek expands into AI applications with lower P/E than Peers, offering Re-Rating potential

MediaTek is actively expanding into AI applications, diversifying its product portfolio beyond the maturity of its smartphone-dominated business. By leveraging its strong front- and back-end design capabilities, 112G/224G SerDes IP, and close partnership with TSMC, MediaTek is enhancing its AI exposure and is expected to secure a presence in both Cloud AI and Edge AI markets. With the rapid growth of its AI business, valuation multiples based on its smartphone-dominated past are no longer applicable. Therefore, a re-rating is necessary to adequately reflect the growth potential of its AI operations.

We project significant growth in the AI-related business within the Smart Edge segment, with its revenue contribution expected to increase from 10.12% (FY25) to 18.29% (FY26). Similarly, its EPS contribution is forecasted to rise from 7.53 (FY25) to 14.99 (FY26), reflecting an impressive annual growth rate of 99.13%. This underscores the substantial potential for AI business development, with notable gains in both revenue share and profitability. While the current target price is based on FY25 EPS, the P/E multiple has been revised upward following AVGO's earnings call, which highlighted faster-than-expected progress in ASIC advancements.

MediaTek's three-year average P/E multiple is approximately 14x, noticeably lower than the average of its Taiwanese AI peers (Alchip, GUC) (Figure 41). While a P/E multiple of 21x falls within the higher end of its five-year historical range (Figure 18), we believe it is warranted based on the factors discussed above. Along with our optimistic view of the growth prospects and significant profitability contributions from future AI-related businesses, a 21x P/E multiple (PEG 1.02) is well-aligned. It effectively captures MediaTek's rapid expansion in AI applications and its enduring potential in the ASIC market.

FIGURE 41: Past 3- and 5-year Historical Forward P/E Range of the Peers

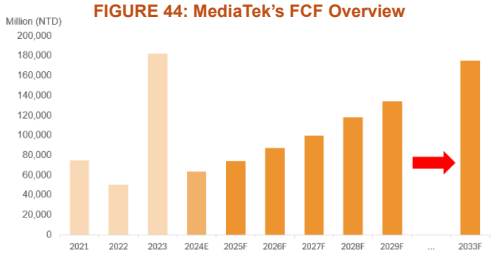


Source: TEJ, Trading View, Team Analysis

Absolute Valuation—DCF Approach

We have employed the Free Cash Flow (FCF) approach to determine MediaTek's intrinsic value based on its terminal products, which are categorized into smartphones, smart edge (including IoT, computing, and ASIC; smart home), and PMIC. We analyzed the company's historical performance and industry forecasts from 2023 to 2033, arriving at a final valuation of NT$1,633 per share, consistent with our BUY rating.

FIGURE 44: MediaTek's FCF Overview



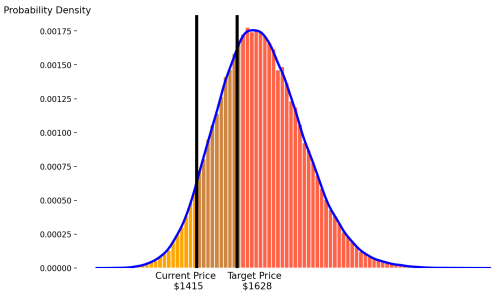
Source: Team Analysis

FIGURE 45: WACC Calculation

Inputs	Rate	Source
Risk free rate	1.46%	Taiwan 10-Yr treasury bond (2024/9/24)
Beta	1.3	1-year beta average in past 5 years
Market risk return	14.33%	TAIEX total return index IRR for past 5 years
Cost of equity	18.19%	CAPM
Cost of debt	4.09%	5-year average of interest expense/non-current liabilities
Tax rate	20%	Marginal tax rate
D/A ratio	41.07%	Target level
WACC	12.06%	

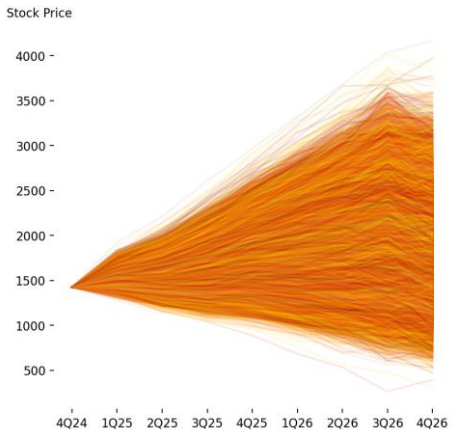
Source: TEJ, MediaTek, Team Analysis

FIGURE 46: Monte Carlo One-Year Stock Price



Source: Team Analysis

FIGURE 47: Brownian Price Paths



Source: Team Analysis

FIGURE 48: Football Field Projection of MediaTek

Model	Method	Factor	Range
(A)	Forward P/E Multiple	PEG	0.75~1.2
(B)		Mobile Revenue	-10%~ +10%
(C)		Long-term Operating Margin	15.18%~19.18%
(D)	Discounted Cash Flow	Mobile Revenue	-10%~ +10%
(E)		Long-term Operating Margin	15.18%~19.18%
(F)		WACC	10%~14%

Source: Team Analysis

R&D Expense Capitalization

Given the rapid pace of change and product innovation within the semiconductor industry, significant R&D investment is crucial for maintaining a competitive edge, particularly for products such as smartphone chips, IoT devices and AI-related technologies. To more accurately reflect the long-term value these investments bring to the enterprise, we have capitalized MediaTek's R&D expense, setting a five-year amortization period, which is based on the typical product life cycle within the industry. According to our financial analysis, R&D expenditures account for approximately 23% of total revenue. After we capitalized R&D expense, CAPEX (Figure 42), adjusted operating income and other factors, makes the Free Cash Flow (Figure 43) performance more flexible and growth oriented.

Free Cash Flow

In 2023, the global economic downturn presented challenges such as weak demand, inflationary pressures, and high interest rates, prompting MediaTek to adjust its inventory levels in response to these macroeconomic factors. This strategy led to an increase in refund liabilities (current liabilities), which significantly boosted FCF in the short term. With the recovery of global economy in 2024, and despite a forecasted slowdown in the smartphone segment, MediaTek has invested heavily in developing sectors like IoT, computing, and ASIC, creating growth momentum. The accompanying chart illustrates a consistent FCF growth (Figure 44).

WACC

We calculated MediaTek's WACC at 12.06%, using the TWSE stock price return index, adjusted for dividends, minus the risk-free rate as the market's expected risk premium. Considering the interest rate environment, the yield on Taiwan's 10-year government bonds is adopted as the risk-free rate, and the past five years' interest expenses relative to total debt as the cost of debt. We used MediaTek's current debt ratio for our capital structure estimate and applied the CAPM model to calculate the cost of equity (Figure 45).

Terminal Growth Rate

Given that China, US, and South Korea are MediaTek's primary export markets, we have adopted the weighted average of the expected GDP growth of these three countries as the basis for the perpetual growth rate, estimated at approximately 3%. Based on this, and considering MediaTek's future growth potential in areas like AI and data centers, we have assigned a perpetual growth rate of 3% for sectors such as IoT, Computing, and ASIC. In contrast, for more mature terminal products like smart home, smartphones, and PMIC, we have assigned a lower perpetual growth rate of 2%.

Monte Carlo Simulation and Scenario Analysis

Monte Carlo One-Year Stock Price (Appendix D-3)

We run a one-million-iteration Monte Carlo simulation with adjusting all key variables (Figure 46) (Figure 47). It illustrates how key investment risks affect the future stock price of MediaTek. It suggests that there is a 69.4% probability that the stock price would not be less than our target price after one year, and the probability of this future stock price being larger than current stock price is 93.9%. It indicates that our target price is an unbiased estimate and reinforce our BUY recommendation.

Scenario Analysis

We conduct a bull and bear scenario analysis to scrutinize the materialization of our three investment theses and the realization of seven potential risk exposures (Figure 48) (Appendix D-4). The bull market condition gives NT$1,900 12-month target price with a 34.3% upside relative to 2024 year-end close price, whereas the bear scenario results in a NT$ 870 target price with a 38.5% downside. Our Monte Carlo displays a 38.9% probability of a stock price equal or above the bull case, and less than 1% for the bear case.

Investment Risks

The risk matrix summarizes MediaTek's main risk exposures (Figure 49). The waterfall chart illustrates that the price would fall to NT$1,453 even under full consideration of all these risks, supporting our BUY suggestion when it is still higher than current price NT$1,415 (Figure 50). We can observe that the most influential risks are geopolitical risk (MR1), saturated market in mobile phones (IR1), and compatibility issue of ARM architecture (FR2).

Macroeconomics Risks

MR1: Geopolitics Risk

Many countries have increased support for domestic semiconductor industries with heavy subsidization, including reshoring policy, to alleviate reliance on Asia's supply chains and strengthen their competitiveness in the global chip market (Appendix E-1). Whereas the entire supply chain was previously concentrated in Asia, the customers for chips are now likely to diversify their supply sources to mitigate potential policy-related risks due to the geopolitical tensions, especially under Trump's protectionist policies. The bifurcation of the supply chain could reduce the orders received by Asian vendors, including MediaTek.

Valuation Impact: According to IDC estimates, driven by geopolitical factors, Taiwan's global market share in wafer manufacturing and assembling/testing is projected to decline from 46% and 51% in 2022 to 43% and 47% by 2027, respectively. Assuming MediaTek is impacted by this trend, we estimate its revenue growth rate will start to decrease by 2% since 2025. This would result in a 3.7% reduction in EPS to NT$74.6 in 2025. With rescaling down the P/E ratio to 18x, the target price is reduced by 17.5% to NT$1,343.

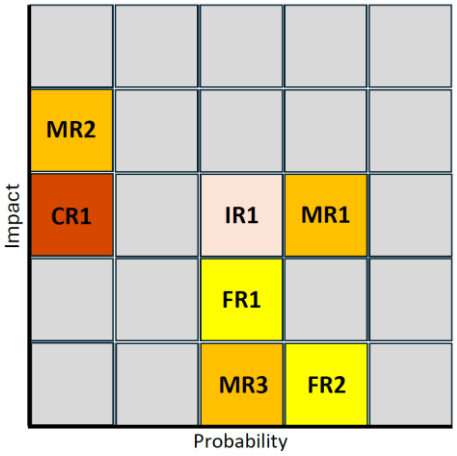
Mitigation: Protectionist policies, such as those implemented in the US and Europe, often require foundry and OSAT firms to localize production and comply with stricter regulations, increasing operational risks. Fabless companies like MediaTek, with flexible supplier choices (e.g., wafer), are better positioned to mitigate such risks and adapt to policy shifts. As a result of its partnerships with international companies, MediaTek is less vulnerable to being targeted by local governments (Appendix E-1). MediaTek also actively seeks out potential clients in various countries to reduce its reliance on orders from a single country (Appendix E-1). MediaTek invests heavily in R&D to stay on top of technological advances, strengthening customer confidence in its products (Figure 22).

MR2: Business Cycle and Recession Risk

The IC design industry is highly sensitive to business cycles. Electronics products tend to be less popular during economic downturns.

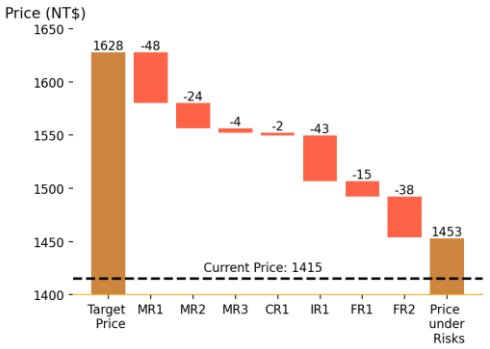
Valuation Impact: Assuming a global recession in 2025, MediaTek's annual revenue is expected to decline by 15%, leading to a 16.3% reduction in estimated EPS to NT$64.9. In the early stages of the downturn, we apply a P/E ratio of 17.5x, and thus lower the target price by 30.2% to NT$1,136.

FIGURE 49: Risk Matrix



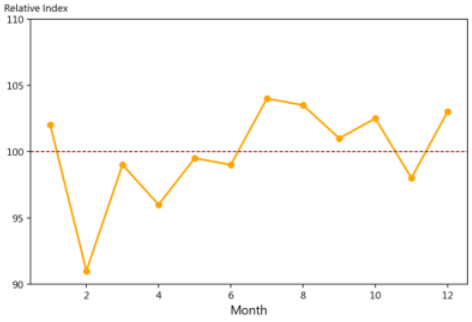
Source: The Global Risk Report 2024, Team Analysis

FIGURE 50: Water Fall Chart



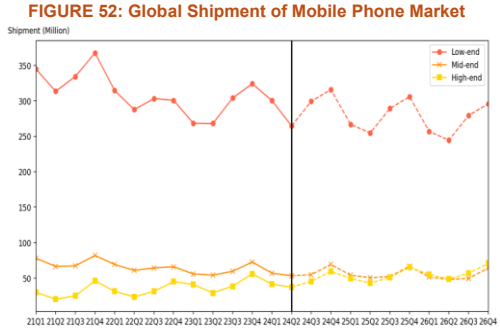
Source: The Global Risk Report 2024, Team Analysis

FIGURE 51: The Relative Amount of Water Supply over Months from 2004 to 2023



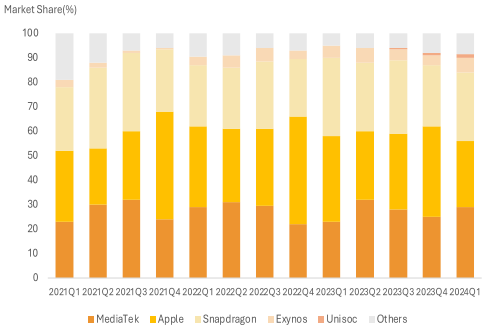
Note: The baseline 100 represents the average monthly water supply from 2004 to 2023.
Source: The Statistical Yearbook of Taiwan Water Corporation, 2023

FIGURE 52: Global Shipment of Mobile Phone Market



Source: Bloomberg, Team Analysis

FIGURE 53: Market Share of 5G Smartphone by Chipset Vendor



Source: Omdia Smartphone Model Market Tracker 1Q24

Mitigation: As global inflation eases and downstream inventory levels return to healthy levels, manufacturing production continues with active investment in R&D. A recovery in consumer demand for electronics has been observed since 2023 (Appendix E-2), which suggests that the industry cycle is in an upward phase.

MR3: Interest Rate Risk and Exchange Rate Risk

Following the Fed's announcement on September 18th to cut interest rates by 50 bps, there is a potential for entering a rate-cutting cycle. This will affect MediaTek's investments in USD. Furthermore, changes in USD interest rates will also impact exchange rates. The NTD is likely to appreciate against the USD, which could affect both operating income and non-operating income. Considering the impact of hedging instruments, currently a 10-bps appreciation of NTD against USD reduces MediaTek's profits/losses by NT$45 million (Appendix E-3).

Valuation Impact: If the Federal Reserve cuts rates by 50 bps in 2025, this will impact both interest rates and exchange rate risks, resulting in a net income drop of 0.3%. The projected EPS for 2025 is revised down by 3.8% to NT$74.6. Hence, with a P/E ratio of 20x, the target price is adjusted down by 8.4% to NT$1,492.

Mitigation: MediaTek engages in financial hedging activities, including forward foreign exchange contracts and currency swap agreements, to offset the impact of exchange rate fluctuations (Appendix E-3).

Climate Risks

CR1: Water Supply Restriction

MediaTek relies on water for cooling systems, and a disruption in the water supply could result in the inability to operate its chilled water units and IT data centers. Water consumption is approximately 0.65 cubic meters per NT$1 million in revenue. Currently, the company's annual water consumption stands at 507 million liters (Figure 31). Taiwan has also experienced water shortages in the past due to insufficient supply, leading to water rationing (Appendix E-4).

Valuation Impact: We assume water rationing in the spring of 2025 leads to a 10,000 cubic meters reduction in MediaTek's water usage. It results in a NT$15 billion decline in 2Q25 revenue, and hence revises down our 2025 estimated EPS by 5.7% to NT$73.1. We lower the P/E ratio to 20x and adjust target price down by 10.2% to NT$1,462.

Mitigation: Taiwan has experienced water shortages only three times in the past 20 years. MediaTek has installed water storage tanks and purchased water trucks. In water rationing, water is provided first to production, which is expected to remain operational for as long as a week, exceeding the longest rationing period. MediaTek also implements water reduction measures and invests in water recycling projects, recycling 14,814 cubic meters of water each year.

Industry Risks

IR1: Saturated Market in Mobile Phone

Even though the mid-to-high-end smartphone market is expected to continue to grow (Figure 52), smartphones have now reached a mature stage of development. Because of the saturation in major markets like the US, Europe, and China, growth potential may be limited. Furthermore, the smartphone market is highly competitive, with major players such as Qualcomm, Samsung, Apple, and Huawei, which could negatively impact MediaTek's market share soon.

Valuation Impact: We assume the growth rate of high-end smartphones declines by 10%/20%/50%. MediaTek's 2025 (2026) revenue would decrease by 0.98%/1.94%/4.74% (1.88%/3.71%/8.82%). Accordingly, we revise down our EPS estimates by 0.9%/1.7%/4.3% to NT$76.8/76.2/74.2. We apply P/E ratio of 19x/18x/16x, resulting in target price reduction of 10%/16%/27% to NT$1,459/1,372/1,187.

Mitigation: AI smartphones are improving user experiences in areas such as smart cameras, voice assistants, and energy management as generative AI applications become more prevalent. This is expected to drive demand for smartphone upgrades. MediaTek's AI chip, Dimensity, intends to capture market share in the high-end smartphone segment. MediaTek also develops IoT-related technologies like Dimensity Auto, WoA AIPC chip, and data center ASIC to diversify its business.

Firm Risks

FR1: Issue of Cost Transferability under Supply Chain Cost Variation

Because of changes in supply chain costs, such as an increase in ARM licensing fees or TSMC foundry fees, MediaTek's gross margins may be adversely affected if it fails to pass on the additional costs incurred to downstream customers.

Valuation Impact: According to estimates based on Bloomberg and MediaTek's financial reports, assuming TSMC's advanced process prices increase by 1% since 2025 and MediaTek is unable to pass on the cost, it will experience lower gross margins for the products that involve in the advanced process including 5G Logic IC, WiFi-7, ASIC, ARM, and automotive chips. In the short term, the total gross margin will decrease by 0.23%, and the estimated 2025 EPS will be revised down by 1.1% to NT$76.6. We are lowering the P/E ratio to 19x, and the target price would be reduced by 10.5% to NT$1,456.

Mitigation: The products offered by MediaTek are highly competitive. There is a market share of 25-30% for its logic IC products in the 5G smartphone market (Figure 53). In order to enhance its product competitiveness, it invests heavily in R&D and collaborates with international partners to develop new products and technologies, such as expanding into the automotive market with NVIDIA (Figure 22) (Appendix E-1). By leveraging its competitive advantages, MediaTek can transfer the additional costs incurred from supply chain price variations, for instance, the 20% price hike by TSMC in 2021, without significantly affecting its gross margins.

FR2: Issue of Compatibility of ARM Architecture

The compatibility issues between WoA and Windows PCs have long persisted and remain unresolved (Appendix E-5). It is possible that consumers will continue to prefer x86-based computers due to familiarity if MediaTek cannot resolve these compatibility issues prior to the launch of its ARM-based products in 2026.

Valuation Impact: If the compatibility issue with ARM-based products impacts revenue, it leads to a 10% decrease in the IoT division's revenue projections after 2Q26. However, the P/E ratio would be revised down to 18.5x, resulting in a 12% reduction in the target price to NT$1,434.

Mitigation: Because of its unrivaled advantages over x86 architecture, including cloud-native capability and energy efficiency (Appendix E-5), ARM architecture has the potential to attract laptop users who work remotely. Several other major tech companies, including Qualcomm, are also pursuing ARM-based products because of the benefits of the ARM architecture.

Appendix

APPENDIX A: Financial Analysis

APPENDIX A-1: Income Statement

Consolidated Income Statement (Million, NTD)	FY21A	FY22A	FY23A	FY24E	FY25F	FY26F
Revenue	**493,415**	**548,796**	**433,446**	**523,594**	**602,560**	**698,694**
Cost of Goods Sold(COGS)	261,810	277,892	226,079	264,379	312,733	368,616
Gross Profit	**231,605**	**270,904**	**207,367**	**259,216**	**289,827**	**330,078**
Selling, General, and Administrative	27,483	27,241	24,127	27,404	29,746	34,418
Research and Development	96,081	116,875	111,385	126,693	144,614	167,687
Expected Credit Gain/Loss	0.47	0.45	55.67	(52.54)	0	0
Operating Expenses	**123,564**	**144,116**	**135,568**	**154,045**	**174,361**	**202,105**
Operating Income	**108,040**	**126,788**	**71,800**	**105,171**	**115,467**	**127,973**
EBIT	**126,985**	**135,846**	**87,112**	**122,814**	**138,114**	**151,198**
Depreciation & Amortization	10,621	14,980	18,200	20,952	22,992	24,753
EBITDA	**137,606**	**150,826**	**105,312**	**143,766**	**161,105**	**175,951**
Non-Operating Income/Loss	18,812	8,773	14,983	17,315	22,280	22,852
Net Income	**111,873**	**118,625**	**77,191**	**109,453**	**123,937**	**135,704**
Net Income Attributable to the Parent Company	111,421	118,141	76,979	108,687	123,143	134,910
Net Income Attributable to Non-Controlling Interests	451	484	212	765	794	794
Weighted Average Number of Ordinary Shares Outst	1,579	1,584	1,587	1,589	1,589	1,589
Basic Earnings per Share	**70.60**	**74.62**	**48.52**	**68.41**	**77.51**	**84.92**

Source: MediaTek, Team Analysis

APPENDIX A-2: Balance Sheet

Balance Sheet (Million, NTD)	FY21A	FY22A	FY23A	FY24E	FY25F	FY26F
ASSETS						
Current Assets						
Cash and Equivalent	183,705	147,502	165,396	218,898	262,606	278,356
Accounts Receivable	58,660	40,842	55,834	51,087	74,086	77,021
Inventories	73,271	70,703	43,220	58,852	77,649	89,619
Others	31,230	38,606	26,438	36,069	49,670	54,065
Total Current Assets	**346,865**	**297,654**	**290,889**	**364,905**	**464,011**	**499,063**
Non-Current Assets						
Property, Plant and Equipment	49,111	53,862	53,291	57,255	57,897	59,123
Long Term Investments and Associates	128,123	123,489	150,006	171,209	188,044	203,789
Others	136,777	133,395	140,853	132,433	132,433	132,433
Total Non-Current Assets	**314,012**	**310,746**	**344,150**	**360,897**	**378,374**	**395,345**
Total Asset	**660,877**	**608,399**	**635,038**	**725,802**	**842,385**	**894,407**
LIABILITIES AND EQUITY						
Current Liabilities						
ST. Debt and Current Portion of LT. Debt	54,961	6,569	7,826	26,478	27,553	28,672
N/P & A/P	43,504	21,518	38,779	34,760	59,692	54,030
Others	112,641	113,484	185,394	190,220	241,699	258,601
Total Current Liabilities	**211,106**	**141,570**	**231,999**	**251,458**	**328,944**	**341,303**
Non-Current Liabilities						
Long Term Debt	1,684	863	4,605	1,662	1,662	1,662
Others	14,439	22,907	24,229	23,134	26,037	29,305
Total Non-Current Liabilities	**16,123**	**23,771**	**28,834**	**24,796**	**27,699**	**30,967**
Total Liabilities	**227,229**	**165,341**	**260,833**	**276,254**	**356,644**	**372,270**
Equity						
Common Stocks	15,988	15,994	15,996	16,017	16,017	16,017
Reserves	59,776	47,185	28,350	31,734	31,734	31,734
Retained Earnings	302,650	348,747	288,453	348,360	384,554	420,949
Others	53,601	28,182	35,406	45,131	45,131	45,131
Total Equity Attributable to Owners of Parent	432,015	440,109	368,206	441,241	477,435	513,831
Non-Controlling Interests	1,633	2,949	6,000	8,306	8,306	8,306
Total Equity	**433,648**	**443,058**	**374,205**	**449,548**	**485,741**	**522,137**
Total Liabilities and Equity	**660,877**	**608,399**	**635,038**	**725,802**	**842,385**	**894,407**

Source: MediaTek, Team Analysis

APPENDIX A-3: Cash Flow Statement

Cash Flow Statement (Million, NTD)	FY21A	FY22A	FY23A	FY24E	FY25F	FY26F
OPERATING ACTIVITIES						
Net Income	111,873	118,625	77,191	109,453	123,937	135,704
Depreciation	5,543	9,282	11,001	12,625	14,165	15,624
Change of Accounts Receivable	(25,527)	17,818	(14,992)	4,748	(23,000)	(2,935)
Change of Inventories	(35,593)	2,567	27,483	(15,631)	(18,797)	(11,971)
Change of Other Current Assets	(6,757)	(7,376)	12,168	(9,631)	(13,601)	(4,395)
Change of N/P & A/P	9,034	(21,986)	17,261	(4,019)	24,932	(5,662)
Change of Other Current Liabilities	28,278	842	71,910	4,826	51,479	16,902
Cash Flow from Operations	**86,849**	**119,772**	**202,022**	**102,370**	**159,116**	**143,267**
INVESTMENT ACTIVITIES						
CAPEX	(15,682)	(14,033)	(10,431)	(16,589)	(14,807)	(16,850)
Change of Long Term Investments and Associates	(11,357)	4,634	(26,517)	(21,203)	(16,836)	(15,745)
Change of Other Non-Current Assets	(50,472)	3,382	(7,457)	8,420	-	-
Cash Flow from Investing	**(77,511)**	**(6,016)**	**(44,405)**	**(29,372)**	**(31,643)**	**(32,595)**
FINANCING ACTIVITIES						
Change of ST & LT Debt	28,061	(49,213)	4,999	15,710	1,075	1,119
Change of Other Non-Current Liabilities	3,035	8,468	1,322	(1,096)	2,903	3,268
Change of Common Equity	60,181	8,094	(71,904)	73,036	36,194	36,395
Cash Dividend Paid	58,585	116,141	120,981	87,551	86,950	98,515
Other Financing Charges	(172,075)	(233,449)	(195,121)	(194,697)	(210,887)	(234,219)
Cash Flow from Financing	**(22,213)**	**(149,959)**	**(139,723)**	**(19,496)**	**(83,765)**	**(94,922)**
Net Change in Cash	(12,875)	(36,202)	17,894	53,502	43,708	15,750
Cash and Cash Equivalent, Beginning	196,580	183,705	147,502	165,396	218,898	262,606
Cash and Cash Equivalent, End	**183,705**	**147,502**	**165,396**	**218,898**	**262,606**	**278,356**
FCF	**71,166**	**105,740**	**191,591**	**85,781**	**144,309**	**126,417**

Source: MediaTek, Team Analysis

APPENDIX B: Industry Overview & Competitive Positioning

APPENDIX B-1: Steps in IC Design

1. System Specification	4. Circuit Design	7. Fabrication
2. Architectural Design	5. Physical Design	8. Packaging and Testing
3. Functional Design and Logic Design	6. Physical Verification and Signoff	9. Chip

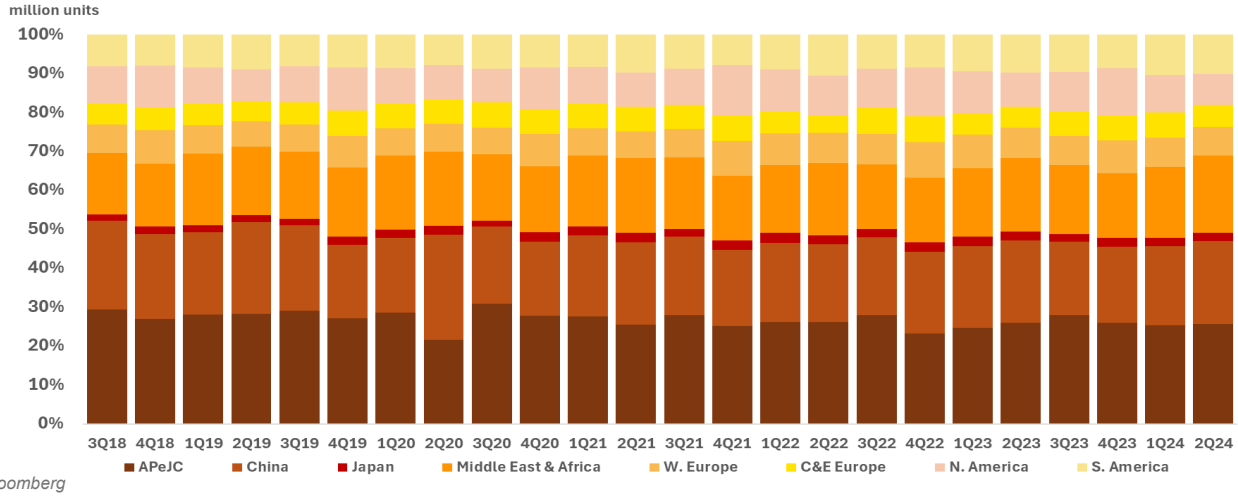
Source: TSMC, Team Analysis

APPENDIX B-2: Flagship SoC Comparison

Specification	Snapdragon 8 Gen 4	MediaTek Dimensity 9400
CPU Architecture	Qualcomm Oryon Custom Cores	ARM Cortex-X5 + Cortex-X4
Max CPU Frequency	Up to 4.32 GHz	Up to 3.63 GHz
GPU	Adreno 830	ARM Immortalis-G925
NPU (AI Performance)	Hexagon NPU (50 TOPS)	MediaTek APU (35 TOPS)
AI Capabilities	Real-time AI processing	AI inference
Manufacturing Process	TSMC 3nm	TSMC 3nm
Key Feature	Hardware Ray Tracing	Ray Tracing
Overall Performance	Strong multi-core performance, high power usage	Balanced performance, improved efficiency

Source: MediaTek, Team Analysis

APPENDIX B-3: Smartphone Shipment by Region



Source: Bloomberg

APPENDIX B-4: WiFi Spec by Generation

	WiFi 5	WiFi 6	WiFi 6E	WiFi 7
Launch date	2014	2019	2020	2024
IEEE standard	802.11ac	802.11ax	802.11az	802.11be
Frequency	5 GHz	2.4 GHz / 5 GHz	2.4 GHz / 5 GHz / 6 GHz	2.4 GHz / 5 GHz / 6 GHz
Bandwidth (MHz)	20, 40, 80, 80+80, 160	20, 40, 80, 80+80, 160	20, 40, 80, 80+80, 160	20, 40, 80, 160, 320
Maximum transmission rate	3.5Gbps	9.6Gbps	10.8Gbps	46.1Gbps
Modulation mode	256-QAM (OFDM)	1024-QAM (OFDMA)	1024-QAM (OFDMA)	4096-QAM (OFDMA)
Security protocol	WPA 2	WPA 3	WPA 3	WPA 3

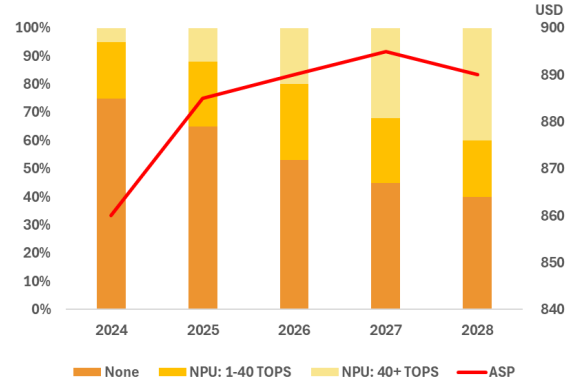
Source: H3C

APPENDIX B-5: Supplementary Analysis: AIPC (WoA) and AI Smartphone

Cloud to Edge-AIPC

AI is poised to boost growth for IC design firms as LLM development accelerates adoption, leading to a compute power race among top CSPs. To counter NVIDIA's dominance, CSPs are exploring GPGPU alternatives like ASICs, which deliver better performance and efficiency for specific AI tasks, driving growth for IC design service companies. PCs and smartphones are evolving into AI-capable platforms, with SoCs incorporating NPUs becoming the standard. Microsoft's end of support for Windows 10 in October 2025 is expected to boost AIPC penetration, with IDC projecting shipments to grow from 50 million in 2024 to 167 million by 2027, reaching 60% of the total PC market. Microsoft's Copilot+PC initiative sets AIPC hardware requirements at 40 TOPS NPU performance, starting with Surface notebooks equipped with Qualcomm's ARM-based Snapdragon Elite X, signaling a shift from Wintel to WoA. However, ARM CPUs face compatibility issues, affecting software support and corporate adoption. Upcoming ARM CPUs from the MediaTek-NVIDIA collaboration may help resolve these challenges and accelerate WoA AIPC adoption.

Worldwide Desktop&NB Forecast by NPU

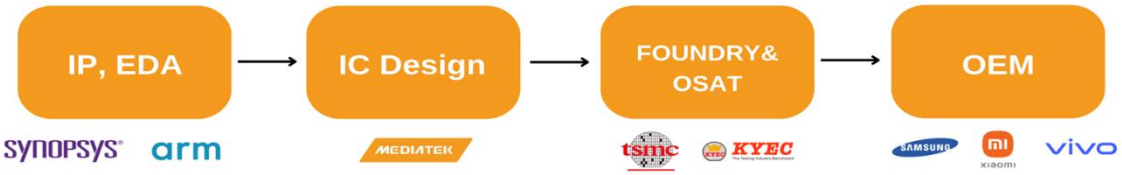


Source: IDC, Team Consensus

AI Smartphone

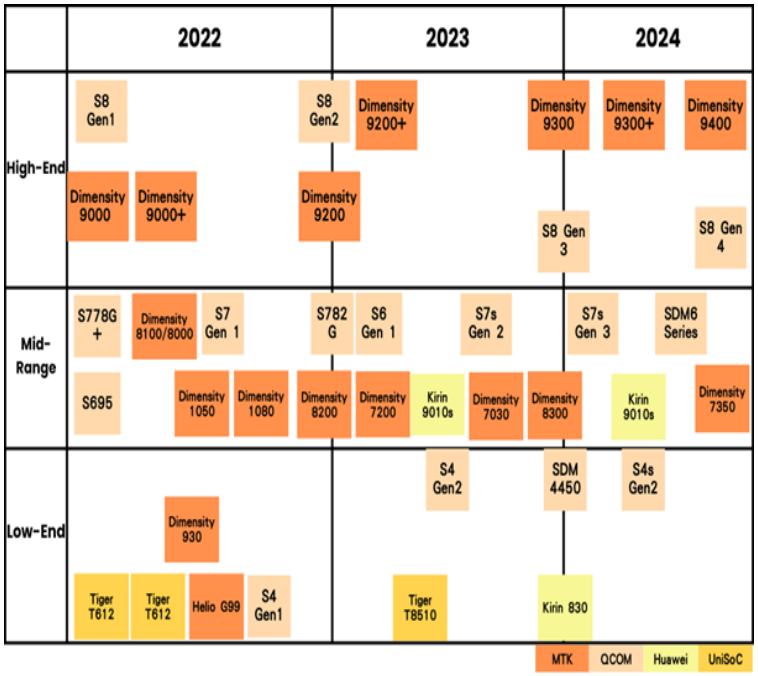
AI features like NLP for Siri and camera algorithms have been in smartphones, but current AI phones focus on using LLMs with NPUs exceeding 30 TOPS. At this early stage, they enable on-device processing, addressing privacy and network issues, though software limitations restrict functions to translation, summarization, and recognition tasks. With Apple's launch of "Apple Intelligence" at WWDC, future AI applications are set to revolve around AI Agents that can learn, identify tasks, and integrate with third-party apps for tasks like booking and planning.

APPENDIX B-6: IC Supply Chain



Source: TSMC Team Analysis

APPENDIX B-7: Smartphone SoC Roadmap



Source: MediaTek, Team Analysis

APPENDIX B-9: Peer Comparison

PEER COMPARISON				
Company	Market Cap (USD)	Net Sales (LTM) (M,USD)	Net Sales by Region	Major market
MediaTek Inc	63.39 B	15,798		
Smartphone				
QUALCOMM Inc	189.525 B	37,348		Flagship smartphone
UNISOC	766.40 B	NA	NA	Entry-level and mid-range smartphones
HUAWEI	N A	NA		Entry-level and mid-range smartphones
smartedge				
Broadcom Inc	8,065.62B	55,691		Enterprise networking, telecom and 5G networks, IoT, autonomous driving and automotive technology, and cloud and edge data centers
PMIC				
QUALCOMM Inc	189.525 B	37,348		Applied in consumer electronics, automotive electronics, wearables, and networking equipment

Source: Team Analysis

APPENDIX B-8: SWOT

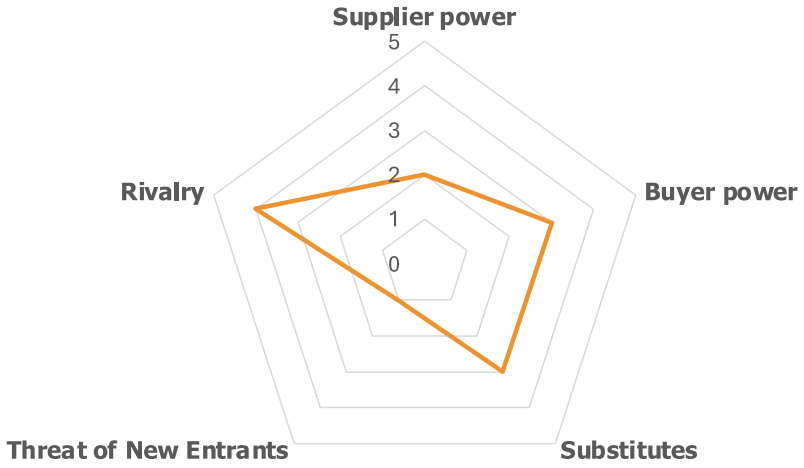
Source: Team Analysis

APPENDIX B-10: Porter's Five Forces

Competitive forces	Content
Supplier power	(1) TSMC and other wafer foundries hold strong bargaining power in advanced processes. (2) In advanced processes: Suppliers have higher bargaining power. Through long-term cooperation and large orders, MediaTek has a strong ability to pass costs on to downstream OEMs. (3) In mature processes: Bargaining power is lower, providing MediaTek with a cost advantage.

Competitive forces	Content
Buyer power	(1) Major customers such as Samsung, Xiaomi, OPPO, and vivo have a significant impact on revenue, granting them strong bargaining power. (2) Limited product differentiation: Similar chip performance and features make buyers more price-sensitive. (3) High price sensitivity: OEMs focus on cost control, enhancing their bargaining power.
Substitutes	(1) Smartphone SoC: Qualcomm's Snapdragon series dominates the high-end market, leading manufacturers to prefer Qualcomm's SoCs, which poses a substitution threat to MediaTek. (2) PMIC: The threat level is high due to competition from companies like Texas Instruments and the pressure of custom power solutions.
Threat of New Entrants	(1) Technology-Intensive, High Entry Barriers (2) The Market Is Gradually Maturing, Requiring New Entrants to Invest Substantial Resources to Compete
Rivalry	(1) Smartphone SoC: Qualcomm (Dominates the high-end market)、UNISOC and Huawei (competitive in the mid to low-end market.) (2) WIFI: Broadcom (Widely used in enterprise and high-end consumer electronics), Intel, and Qualcomm (Focused on PCs and notebooks) (3) PMIC: Texas Instruments covers consumer, industrial, and automotive applications, while Qualcomm is used in smartphones and consumer PMICs.

Source: Team Analysis

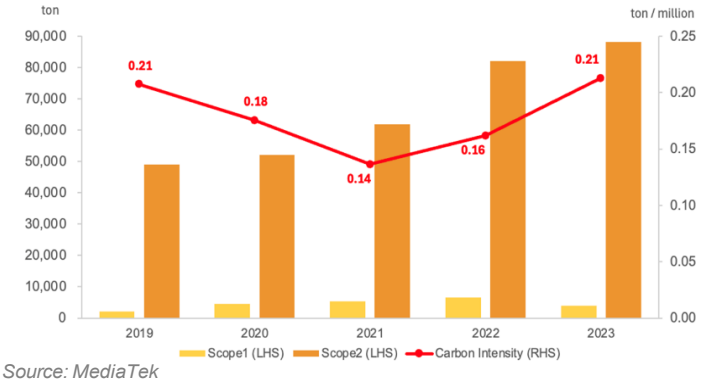


Source: Team Analysis

APPENDIX C: Environmental, Social, and Governance

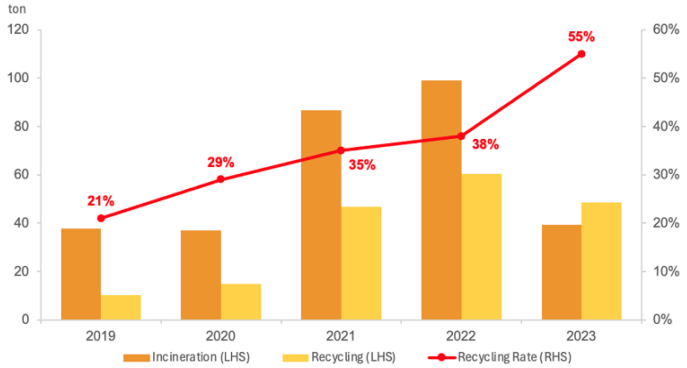
APPENDIX C-1: Environmental

Greenhouse Gas Management



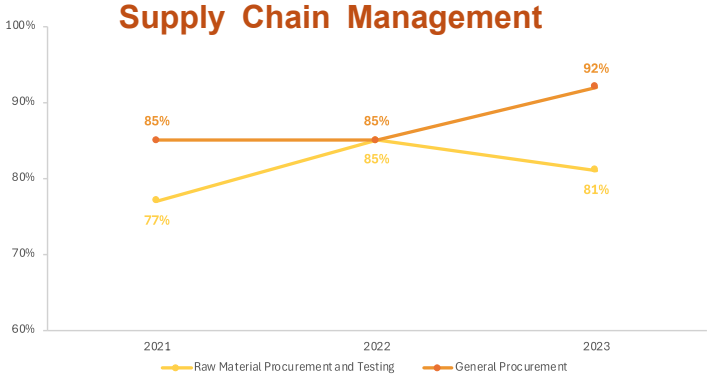
Source: MediaTek

Waste Management



Source: MediaTek

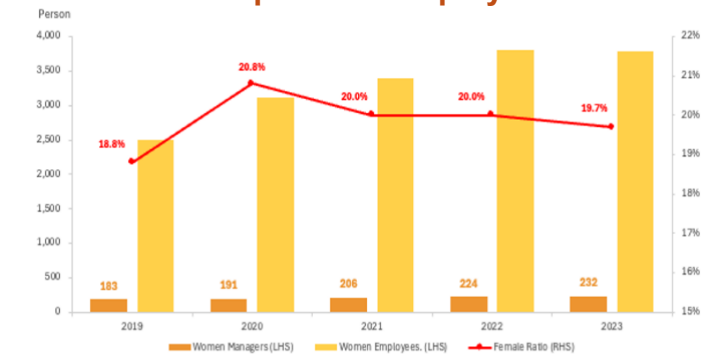
Supply Chain Management



Source: MediaTek

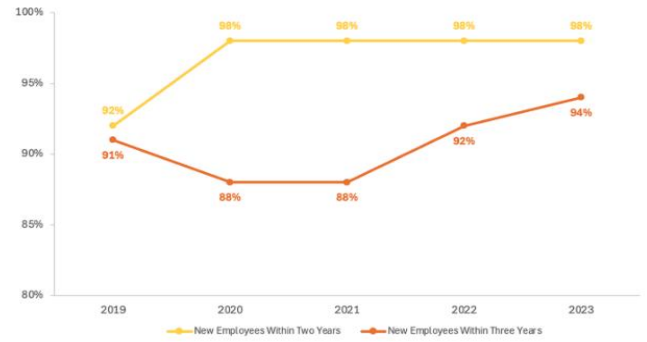
APPENDIX C-2: Social

Female Supervisor/Employee Ratio



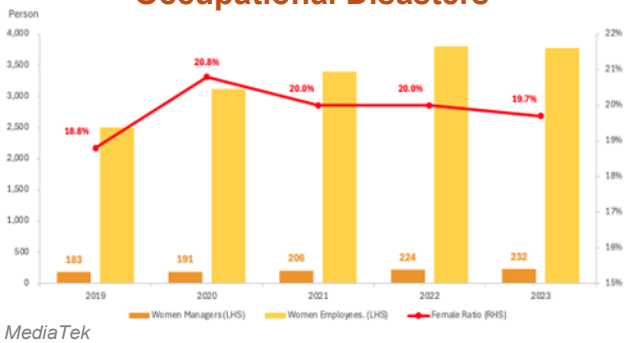
Source: MediaTek

Retention Rate (Two/Three years)



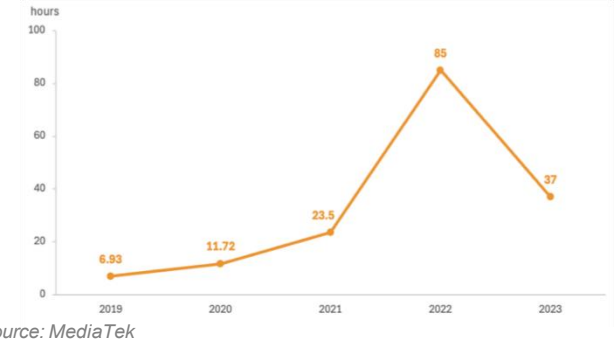
Source: MediaTek

Occupational Disasters



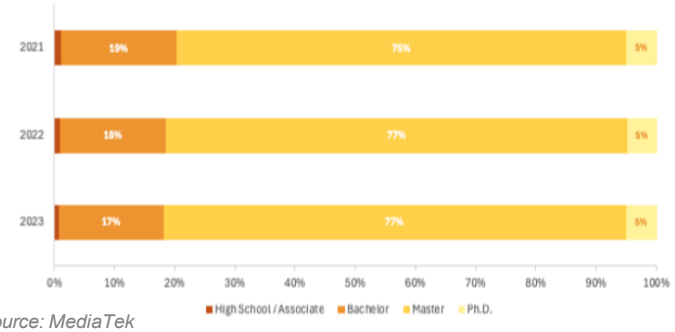
Source: MediaTek

Average Educational and Training Hours per Employee



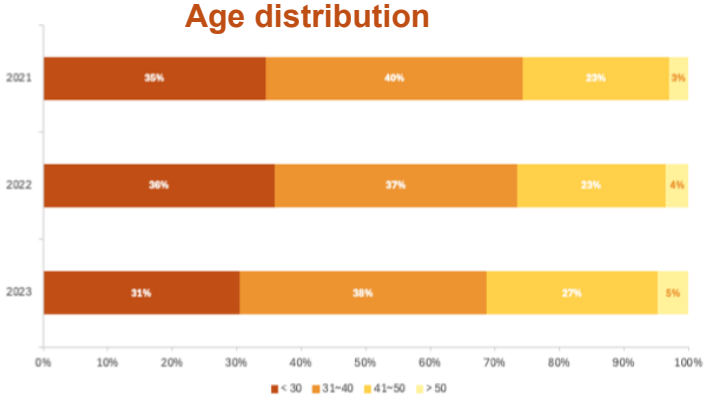
Source: MediaTek

Educational Attainment



Source: MediaTek

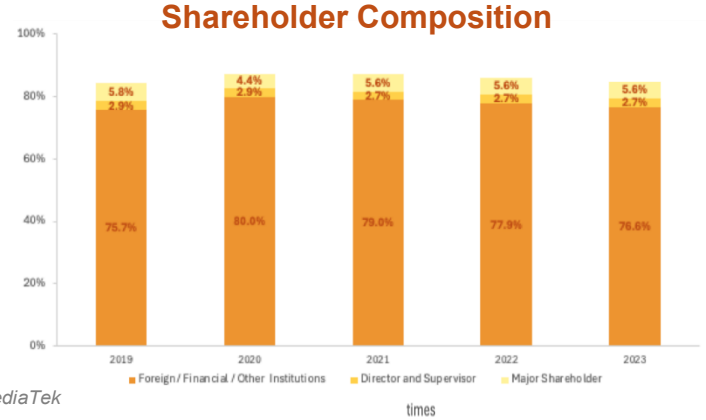
Age distribution



Source: MediaTek

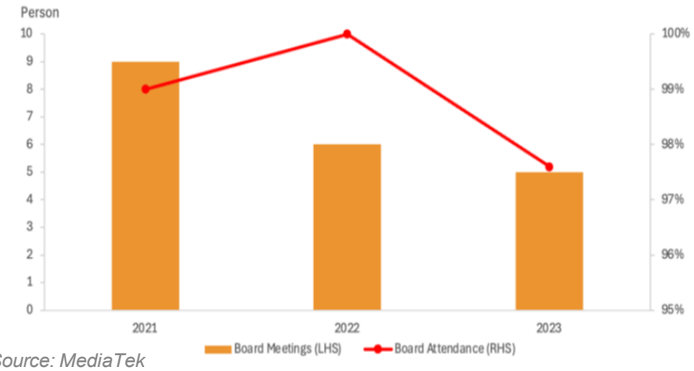
APPENDIX C-3: Governance

Shareholder Composition

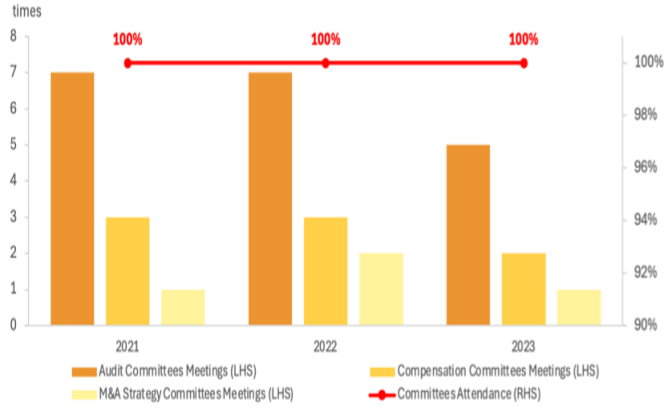


Source: MediaTek

Attendance Status



Source: MediaTek



Source: MediaTek

APPENDIX C-4: SPICE Model

	S	P	I	C	E
MTK ESG Score	69	83	56	5	65
Peer ESG Score	71	67	69	50	58
Individual Rating (Total 5)	3	5	2	1	3
Weights	30%	30%	20%	10%	10%
Weighted Rating	0.9	1.5	0.4	0.1	0.3
MTK SPICE Score	3.2				

SPICE Rating	P/E Adjustment
4.1~5	+10%
3.1~4	+5%
2.1~3	0%
1.1~2	-5%
0~1	-10%

Source: Refinitiv, PRI, MediaTek, Team Analysis

APPENDIX C-5: ESG Score Peer Comparison

Provider	MediaTek	ReaTek	NovaTek
Bloomberg	5.74	6.42	6.36
MSCI	6.43	5	4.57
S&P Global	42	53	45
Refinitiv	62	62	68
AVG	29.04	31.61	30.98

Source: Bloomberg, S&P Global, Refinitiv, MSCI

APPENDIX D: Valuation

APPENDIX D-1: Relative Top10 IC Company Comparison

Company Name	Ticker	Market Cap		Five-year average P/E (x)	EPS			EPS growth (%)			Revenue growth (%)		
					FY23E	FY24F	FY25F	FY23E	FY24F	FY25F	FY23E	FY24F	FY25F
Taiwan													
MTK	2454.TW		2.19T	13x	48.51	68.41	77.51	-34.96%	20.80%	15.08%	-21.02%	20.80%	15.08%
Novatek	3034.TW		300.91 B	11x	38.32	33.32	36.41	-16.62%	-13.05%	9.27%	0.43%	-7.19%	8.84%
Realtek	2379.TW	TWD	275.40 B	15x	17.85	29.63	33.63	-43.55%	65.99%	13.50%	-14.86%	20.32%	12.03%
Alchip	3661.TW		241.13B	25x	45.47	79.42	86.9	76.99%	74.66%	9.42%	122.08%	71.99%	1.76%
GUC	3443.TW		170.19B	31x	26.18	26.42	34.74	-5.45%	0.92%	31.49%	9.16%	-0.15%	25.42%
USA													
NVIDIA	NVDA		3.39 T	56x	1.19	2.9	4.21	-54.81%	143.70%	45.17%	125.85%	108.51%	47.58%
QUALCOMM	QCOM		170.69 B	15x	8.97	11.23	12.35	-43.54%	25.20%	9.97%	8.77%	8.67%	7.41%
Broadcom	AVGO		1.09T	29x	1.23	6.25	7.4	-28.77%	408.13%	18.40%	43.99%	17.60%	14.21%
Advanced Micro Device	AMD	USD	195.76B	73x	3.34	5.28	7.25	-36.90%	58.08%	37.31%	13.00%	27.54%	22.43%
APPLE	AAPL		3.69 T	24x	6.08	7.38	8.28	0.16%	21.38%	12.20%	2.02%	5.87%	8.17%
Marvell	MRVL		98.26 B	21x	-1.08	1.55	2.7	-64.15%	-243.52%	74.19%	-6.96%	4.39%	38.82%
Monolithic Power Systems	MPWR		28.98 B	44x	8.76	13.77	17.23	-3.20%	57.19%	25.13%	1.50%	14.28%	20.13%
Cirrus Logic	CRUS		5.28 B	19x	3.09	4.9	6.77	-44.02%	58.58%	38.16%	6.52%	-5.73%	5.09%
China													
UNISPLENDOUR	000938.SZ	CNY	71.15 B	29x	0.74	0.83	1.04	-44.05%	12.93%	22.89%	4.39%	8.40%	10.80%
Will Semiconductor	603501.SS		126.97 B	38x	0.47	2.73	3.8	-3.20%	474.47%	38.52%	4.69%	25.79%	19.14%

Source: Team Analysis

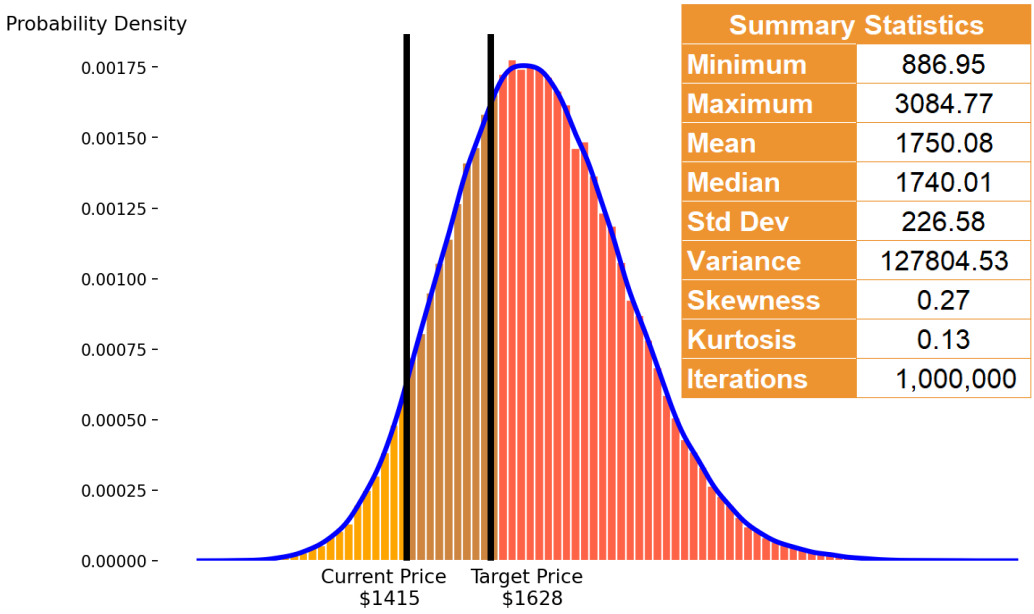
APPENDIX D-2: PEG Table

P/E Multiple	2023~2026 EPS CAGR (%)	PEG	EPS	Target Price (2025)
12	20.52	0.58	77.51	930
12.5	20.52	0.61	77.51	969
13	20.52	0.63	77.51	1008
13.5	20.52	0.66	77.51	1046
14	20.52	0.68	77.51	1085
14.5	20.52	0.71	77.51	1124
15	20.52	0.73	77.51	1163
15.5	20.52	0.76	77.51	1201
16	20.52	0.78	77.51	1240
16.5	20.52	0.80	77.51	1279
17	20.52	0.83	77.51	1318
17.5	20.52	0.85	77.51	1356

18	20.52	0.88	77.51	1395
18.5	20.52	0.90	77.51	1434
19	20.52	0.93	77.51	1473
19.5	20.52	0.95	77.51	1511
20	20.52	0.97	77.51	1550
20.5	20.52	1.00	77.51	1589
21	20.52	1.02	77.51	1628
21.5	20.52	1.05	77.51	1666
22	20.52	1.07	77.51	1705
22.5	20.52	1.10	77.51	1744
23	20.52	1.12	77.51	1783
23.5	20.52	1.15	77.51	1821
24	20.52	1.17	77.51	1860
24.5	20.52	1.19	77.51	1899
25	20.52	1.22	77.51	1938

Source: Team Analysis

APPENDIX D-3: Monte Carlo Simulation



Summary Statistics	
Minimum	886.95
Maximum	3084.77
Mean	1750.08
Median	1740.01
Std Dev	226.58
Variance	127804.53
Skewness	0.27
Kurtosis	0.13
Iterations	1,000,000

Percentile	Output Price ($)
1%	1267.24
5%	1396.88
10%	1467.04
15%	1516.13
20%	1557.03
25%	1591.95
30%	1624.46
35%	1654.68
40%	1683.32
45%	1711.72
50%	1740.01
55%	1768.45
60%	1798.17
65%	1828.54
70%	1862.31
75%	1897.50
80%	1937.51
85%	1937.52
90%	2045.58
95%	2138.20
99%	2320.94

Source: Team Analysis

APPENDIX D-4: Sensitivity Analysis

Revenue Growth Rate of the Smartphone Segment

DCF Model		Revenue Growth Rate of the Smartphone Segment				
		-10%	-5%	0	5%	10%
WACC	10.00%	1,611	1,643	1,654	1,676	1,698
	11.00%	1,600	1,622	1,644	1,665	1,687
	12.06%	1,590	1,611	1,633	1,654	1,676
	13.00%	1,581	1,602	1,624	1,645	1,666
	14.00%	1,571	1,593	1,614	1,635	1,656

Forward P/E Multiple		Revenue growth rate of the smartphone segment				
		-10%	-5%	0%	+ 5%	+ 10%
PEG	0.75	1,043	1,057	1,046	1,129	1,207
	0.85	1,183	1,208	1,155	1,269	1,313
	1.00	1,381	1,419	1,457	1,575	1,672
	1.10	1,521	1,548	1,589	1,694	1,843
	1.20	1,940	1,706	1,752	1,893	2,153

Long-term Operating Margin

DCF Model		Long-term Operating Margin				
		-2%	-1%	0	1%	2%
WACC	10.00%	1,532	1,594	1,655	1,717	1,780
	11.00%	1,521	1,582	1,644	1,706	1,769
	12.06%	1,509	1,571	1,633	1,694	1,757
	13.00%	1,501	1,562	1,624	1,684	1,748
	14.00%	1,491	1,553	1,615	1,673	1,736

Forward P/E Multiple		Long-term Operating Margin				
		-2%	-1%	0%	+ 1%	+ 2%
PEG	0.75	911	981	1,046	1,193	1,101
	0.85	1,029	1,132	1,202	1,392	1,346
	1.00	1,212	1,321	1,473	1,670	1,615
	1.10	1,337	1,472	1,628	1,829	1,835
	1.20	1,455	1,623	1,783	1,949	1,998

Source: Team Analysis

APPENDIX E: Investment Risk

APPENDIX E-1: Global Coopetition of MediaTek

IC Policies among Various Countries

	US	China	EU	Japan	Korea
Act	CHIPS and Science Act	Policy of Promoting the High-Quality Development of the Integrated Circuit and Software Industries	European Chips Act	Act on Promotion of Developing/Supplying and Introducing Systems Making Use of Specified Advanced Information Communication Technologies	K-Chips Act, Amendment of Restriction of Special Taxation Act
Fiscal Budgets	53 Billion USD	10,000 Billion RMB	43 Billion EUR	774 Billion JPY	-
Tax Incentives	V	V			V
Subsidization for Reshoring	V		V		V
State Investment Fund	V	V	V		
Support for IC R&D/Production	V	V	V		
Protective Tariff	V		V		
Technology Export Control				V	

Source: Chung Hua Institution for Economic Research, Taiwan WTO & RTA Center, NARLabs Science & Technology Policy Research and Information Center

List of Cooperation with International Partners

Institutions/Firms	Nation of International Partner	Aspect of Cooperation
Microsoft	US	Micro-Controller Unit Chips
RedTree Solutions	Pan-EU	Platform for Rich-IoT chips
Sony	Japan	Smart speaker
NVIDIA	US	Dimensity Auto
NEC Platforms	Japan	Customer-premises equipment, Mi-Fi
Nokia	Finland	RedCap (Reduced Capability) for IoT
Intel	US	IFS advanced process technologies
Inmarsat	UK	Direct-to-device, two-way satellite connectivity
Ericsson	Sweden	5G FWA (fixed wireless access)
E Ink	US	SoC for ePaper
Cisco	US	Server Chipsets

Source: MediaTek, MoneyDJ, Intel

Global Offices of MediaTek

To better serve the customers among various countries, MediaTek sets offices over the world apart from Taiwan headquarter, including following regions:

Dubai	Finland	Germany
India	Japan	Korea
Mainland China	Singapore	Sweden
United Kingdom	United States	

Source: MediaTek

APPENDIX E-2: ~~Customers~~Supply Chain

Top Three Customers of MediaTek

The top three customers of MediaTek are Samsung, Xianmi, and LG. Here are the amounts and percentages of annual purchases by these three customers:

Customer	Annual Purchases	2020	2021	2022	2023
Samsung	Amount (thousand of NTD)	3,622,611	70,405,724	71,890,831	80,496,067
	Proportion (%)	1.12%	14.27%	13.10%	11.65%
Xiaomi	Amount (thousand of NTD)	1,921,222	54,477,584	66,242,678	48,676,082
	Proportion (%)	0.60%	11.04%	12.07%	11.23%
LG	Amount (thousand of NTD)	20,053,059	51,255,548	60,116,603	47,201,879
	Proportion (%)	6.22%	10.39%	10.95%	10.89%

Source: Bloomberg, MediaTek, Team Analysis

Inventory Amount of The Top Three Customers

Here are the historical data and forecast amounts of the inventory amounts of these three customers:

In Million of USD	2022Q3	2022Q4	2023Q1	2023Q2	2023Q3	2023Q4	2024Q1	2024Q2	2024Q3E	2024Q4E
Samsung	39,877	41,542	41,740	42,117	40,967	39,835	39,632	40,291	37,457	35,426
Xiaomi	7,448	7,311	6,201	5,301	5,048	6,256	7,189	7,090	6,526	7,242
LG	7,797	7,473	7,541	6,528	7,376	7,041	7,456	7,203	7,892	7,974

Source: Bloomberg

Revenues and R&D Expenses of Competitors

Here are the recent amounts and the forecast amounts of the revenues and R&D expenses of Qualcomm, Realtek, and Marvell:

In Million of USD	2019	2020	2021	2022	2023	2024E
Qualcomm	24,273	23,531	33,566	44,200	35,820	38,597
	5,398	5,975	7,176	8,194	8,818	8,726
Realtek	60,744	77,760	105,504	111,790	95,179	116,442
	15,536	19,055	27,950	30,082	26,434	26,434
Marvell	2,866	2,699	2,969	4,462	5,920	5,508
	914	1,080	1,073	1,424	1,784	1,896

Source: Bloomberg

Trading Volume of Semiconductor Sector in Taiwan

The table demonstrates the trading size of semiconductor-related products of Taiwan:

In Billion of NTD	2020	2021	2022	2023	2024E
Import	1,839	2,275	2,652	2,283	2,671
Export	3,388	4,054	5,598	5,193	6,491

Source: Statistics Database Query of CPT Single Window of Customs Administration, Ministry of Finance, Taiwan, Industry Science and Technology International Strategy Center, Industry Technology Research Institute

APPENDIX E-3: Foreign ~~Customers~~Financial Assets and Liabilities Held by MediaTek

The details of the Company's significant foreign currency financial assets and liabilities are as follows tables. The information below is disclosed based on the foreign currency book value (converted to the functional currency).

Disclosure based on the Book Value on 2023/12/31

2023.12.31 (in Thousand)	USD	Exchange rate	NTD
Financial Assets			
Monetary Items:	6,321,566	30.747	194,369,172
Non-Monetary Items:	3,532,366	30.747	108,609,648
Financial Liability			
Monetary Items:	1,797,476	30.747	55,266,993

Source: MediaTek

Disclosure based on the Book Value on 2024/06/30

2024.06.30 (in Thousand)	USD	Exchange rate	NTD
Financial Assets (k)			
Monetary Items:	6,388,898	32.49	207,575,275
Non-Monetary Items:	3,655,498	32.49	118,767,136
Financial Liability (k)			
Monetary Items:	1,557,265	32.49	50,457,116

Source: MediaTek

Outstanding Forward Foreign Exchange Contracts and Currency Swap Contracts

FX Forward Contract	Currency	Contract Amount (in Thousand)		Maturity
2024.06.30	NTD/USD	SELL USD	90,000	2024.07
2024.06.30	NTD/USD	BUY USD	150,000	2024.07
2024.06.30	EUR/USD	SELL USD	3,011	2024.07
2024.06.30	JPY/USD	BUY USD	3,425	2024.12
2024.06.30	KRW/USD	BUY USD	7,846	2024.12
2023.12.31	NTD/USD	BUY USD	500,000	2024.01
2023.12.31	NTD/USD	SELL USD	17,470	2024.01
2023.12.31	NTD/USD	SELL USD	4,470	2024.02
2023.12.31	NTD/USD	SELL USD	3,250	2024.03
2023.12.31	JPY/USD	BUY USD	1,443	2024.06
2023.06.30	NTD/USD	SELL USD	9,000	2023.07
2023.06.30	CNY/USD	BUY USD	331,120	2023.07
2023.06.30	NTD/USD	BUY USD	65,000	2023.09
2023.06.30	JPY/USD	BUY USD	1,435	2023.12
FX Swaps Contract	**Currency**	**Contract Amount (in Thousand)**		**Maturity**
2023.12.31	NTD/USD	SELL USD	10,000	2024.01

Source: MediaTek

APPENDIX E-4: ~~Customers~~Water Supply and Consumption in Taiwan

Basic Statistics of Water Supply in Taiwan

	2019	2020	2021	2022	2023
Capacity of Water Supply System (Cubic Meter/Day)	11,815,655	11,850,518	11,934,103	13,118,401	13,219,336
Percentage of Water Consumed	77.41%	78.00%	78.31%	78.80%	79.36%
Percentage of Water Consumption - Industrial Purpose	25.33%	24.94%	25.18%	24.17%	23.96%
Percentage of Water Consumption - Household	69.32%	69.81%	69.95%	69.88%	70.91%
Percentage of Water Consumption - Shipping	0.05%	0.05%	0.05%	0.04%	0.04%
Percentage of Water Consumption - Organization and Others	5.30%	5.20%	4.83%	5.37%	5.09%

Source: The Statistical Yearbook Of Taiwan Water Corporation, 2023

Timeline of Water Shortage and Rationing

Year of Water Shortage	Reason of the Shortage	Water Rationing
2002	Severe drought in the northern region	V
2005	Increased turbidity of the reservoir due to typhoon	V
2009	Damage to water supply facilities by typhoon	X
2015	Severe drought in the western region	V
2017	Below-normal precipitation	X
2018	Below-normal precipitation	X
2020	Below-normal precipitation	X
2021	Severe drought	V

Source: The Statistical Yearbook Of Taiwan Water Corporation, 2023

APPENDIX E-5: Comparison between ~~Customers~~ARM and

	ARM-based Processors	x86-based Processors
Power Consumption	V	
Performance		V
Software Compatibility		V
Heat Dissipation	V	
Cost-Saving	V	
Embedded Solutions and IoT	V	
Durability and Reliability	V	
Cloud-Nativity	V	

Source: C&T Solution Inc., Gigabyte Technology Co., Ltd.

The ARM community has put a great deal of emphasis on this selling point in recent years. It is inherently *cloud-native* to use ARM processors as these are the dominant type of computer chips used in mobile and edge computing. With more and more devices (such as smartphones and self-driving cars) connecting to the cloud, utilizing the same architecture in data centers may streamline the process. By speaking the same "language", the devices may also be able to communicate more effectively. The ARM architecture is positioned for a counterattack against the x86 architecture, which has been largely unsuccessful in making the leap from PCs and servers to mobile devices.