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Hardware

Daily Views on Tech Headlines

Analysts

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QCOM, INTC, ARM, TSMC: Qualcomm introduces Snapdragon X Elite

View: Qualcomm yesterday announced the Snapdragon X Elite, its latest attempt to break into the PC CPU market, this time using the Oryon cores it acquired with its purchase of Nuvia. Claims around the new product's performance were impressive with Qualcomm suggesting 60% faster single threaded CPU performance and double the multi-threaded performance at 1/3 of the power vs. current Windows offerings, with a 50% advantage vs. an Arm based competitor.

QCOM's entry into the space shouldn't be a surprise, and even the performance claims aren't shocking per se, in light of Apple's success with its M-series processors (we view yesterday's news that NVDA and AMD are also working on Arm based parts as more impactful). Much, in our view, will depend on how the new products perform in real world use (to date Arm product integration in Windows PCs has disappointed despite what should have been attractive power considerations) and we think it will be difficult to have a view on potential penetration/cannibalization rates until PCs with the silicon begin to ship.

Net, we see Arm CPUs as necessarily an area to watch, particularly if AMD and NVDA indeed roll out Arm based parts. Again, we would tend to see Arm and TSMC (note QCOM is using TSMC 4nm production for its new part) as the more certain winners if Arm parts gain traction (vs. trying to determine which IC design house will outexecute in this market). If Arm architectures gain traction, this shift necessarily would create risk for INTC, albeit we continue to believe that Intel's forward success remains more dependent on its ability to execute on its manufacturing transition vs. any other single factor. [Anandtech](#), [PC Mag](#)

MSFT: Hardware implications from earnings

View: PCs have improved while AI monetization should support continued investment

- MSFT saw Windows OEM revenues lift 4%, with the better than expected result driven by improved PC demand and stronger expected builds in consumer channel inventory. In addition, the company guided for FQ2 PC market unit volumes to remain steady Q/Q. We see this better commentary as paralleling our checks suggesting somewhat better PC build/demand trends driven predominantly by consumer oriented SKUs.
- MSFT reported better than expected growth in cloud revenues helped by higher than expected AI consumption. We view this result as supporting continued accelerated investment levels in AI infrastructure (though we believe eventually AI revenues will have to grow far more meaningfully in 2024 to support continued investment at current levels). We'd also note that MSFT guided for a modest deceleration in cloud sales in FQ2, which management attributed to continued customer resource optimization. We see this latter commentary as paralleling what we see as internal optimization efforts at MSFT (and its cloud peers) which are weighing on standard spend with our conversation suggesting this dynamic could remain in place until at least CQ2'24 (if not into the back

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- half of next year).

NVDA, AMD, INTC: New AI chip export control restrictions

View: In an 8K released yesterday, NVDA disclosed that the US has ordered it to immediately cease shipping some of its high-end AI chips to China without licenses. The DoC recently introduced stricter export restrictions on advanced AI chips, which were initially set to take effect on November 16th. However, NVDA was informed by Washington that these controls would apply from that day to products exceeding the updated processor performance cap and intended for datacenters. This move impacts NVDA's A800, H800, A100, H100 chips, as well as the new L40S GPU for generative AI. While the company does not expect this accelerated licensing requirement to significantly affect its financial results, it is seen as a measure to prevent last-minute orders from China. Other major US chipmakers like AMD and INTC have not made similar announcements regarding the accelerated timeline for the chip restrictions, but based on the updated performance density requirements should also include AMD's MI250 and MI300, in addition to INTC's Gaudi 2 chips. [Nikkei](#), [SEC](#)

Risks to the Attainment of Our Price Targets and Ratings: Hardware

Shifts in competition, pricing, technology, and macroeconomic conditions.
 Changes in hyperscale spending tied to shifts in growth or increased optimization.
 Unforeseen events affecting production capacity (power outages, fires, storms, etc.)
 Shifts in worldwide trade conditions that lead to macro instability and or close certain markets.
 Increased competition from China based manufacturers entering new markets.

Analyst Certification

I, Matt Bryson, certifies that the views expressed in this report accurately reflect my personal opinion and that I have not and will not, directly or indirectly, receive compensation or other payments in connection with my specific recommendations or views contained in this report.

Mentioned Companies

Company	Rating	Price	Target
Advanced Micro Devices Inc	OUTPERFORM	\$117.60	\$155.00
Taiwan Semiconductor	OUTPERFORM	TWD547.00	TWD700.00
Intel Corp	NEUTRAL	\$35.69	\$35.00
Apple	OUTPERFORM	\$173.93	\$240.00
Nvidia	OUTPERFORM	\$471.16	\$600.00

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OUTPERFORM: Expect the total return of the stock to outperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

NEUTRAL: Expect the total return of the stock to perform in-line with the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

UNDERPERFORM: Expect the total return of the stock to underperform relative to the median total return of the analyst's (or the analyst's team) coverage universe of the next 6-12 months.

The Investment Ratings are based on the expected performance of a stock (based on anticipated total return to price target) relative to the other stocks in the analyst's coverage universe (or the analyst's team coverage).*

Rating distribution (as of October 25, 2023)	Investment Banking Relationships (as of October 25, 2023)
OUTPERFORM: 60.75%	OUTPERFORM: 4.23%
NEUTRAL: 37.38%	NEUTRAL: 1.25%
UNDERPERFORM: 1.87%	UNDERPERFORM: 0.00%

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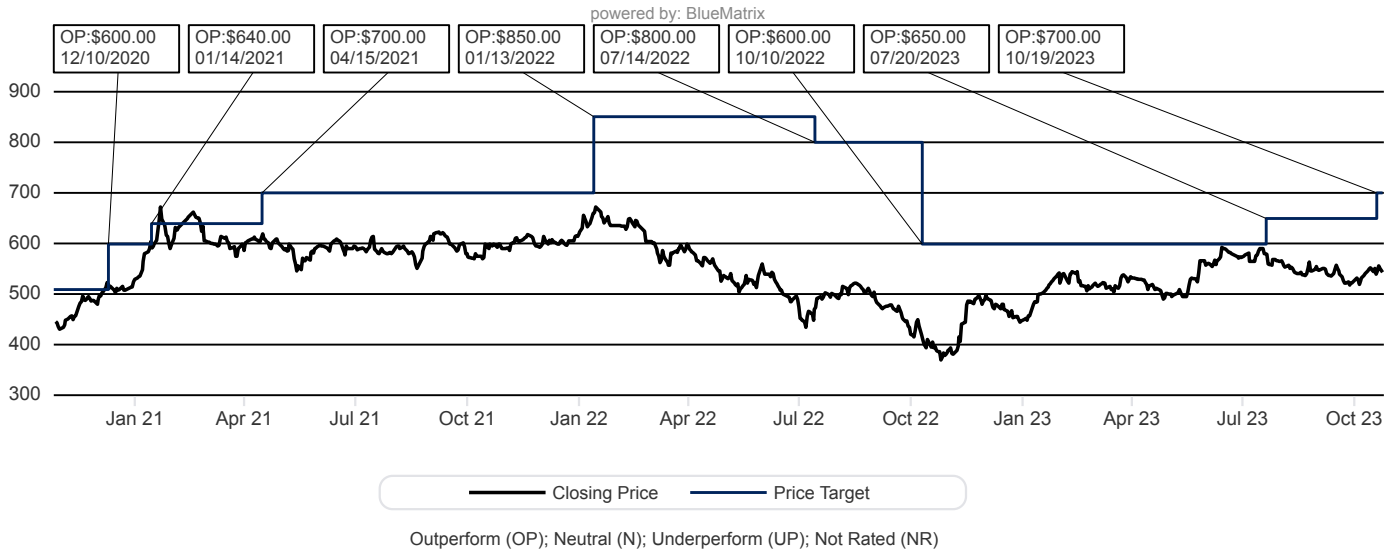
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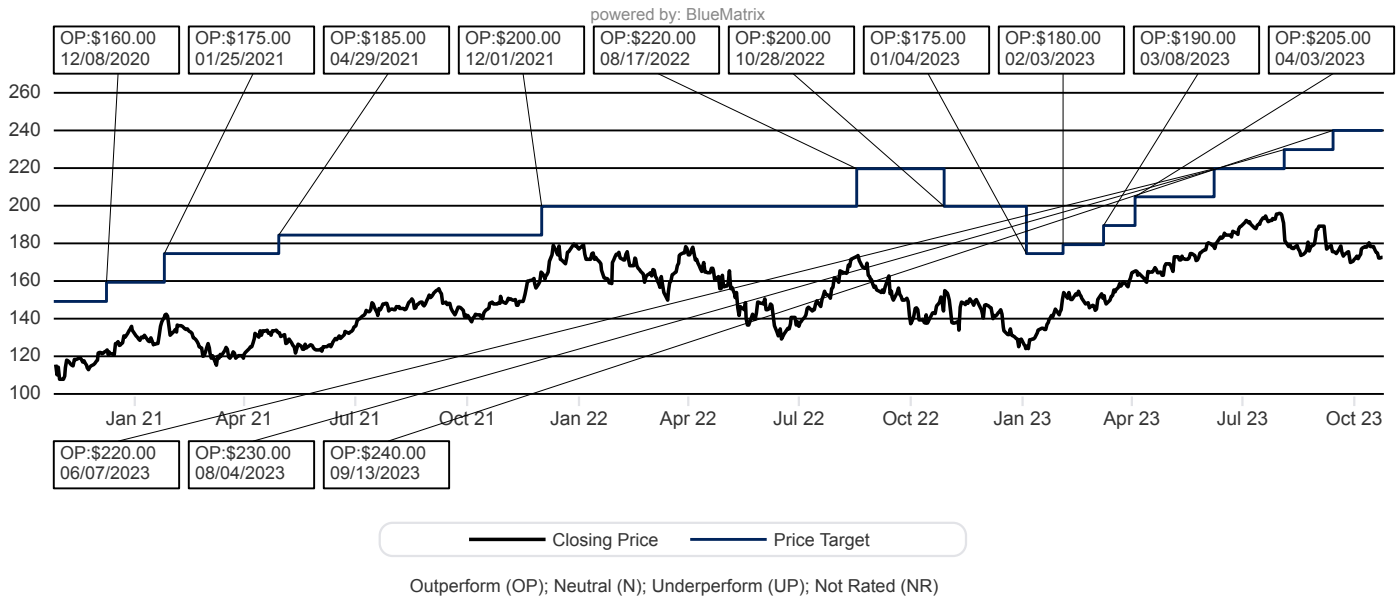
1. WS makes a market in the securities of Taiwan Semiconductor, Apple, Advanced Micro Devices Inc, Intel Corp and Nvidia.

Price Charts

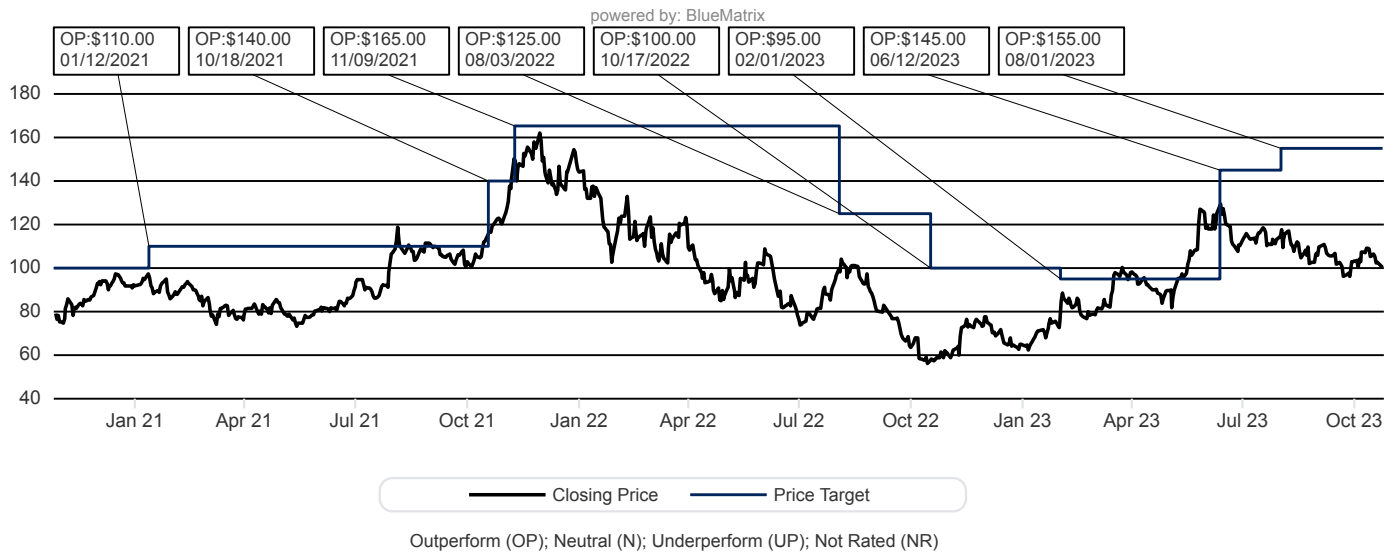
Taiwan Semiconductor Rating History as of 10-23-2023



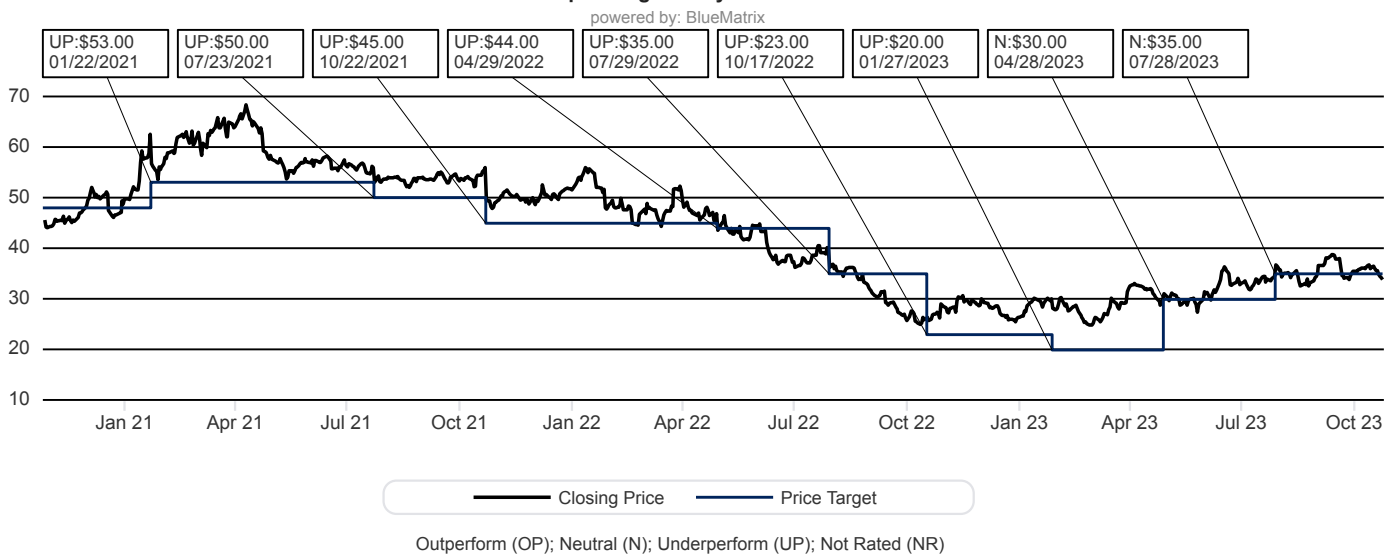
Apple Rating History as of 10-23-2023



Advanced Micro Devices Inc Rating History as of 10-23-2023



Intel Corp Rating History as of 10-23-2023



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*WS changed its rating system from (Strong Buy/ Buy/ Hold/ Sell) to (Outperform/ Neutral/ Underperform) on July 14, 2009.

Applicable disclosure information is also available upon request by contacting the Research Department at (212) 833-1375, by email to leslie.lippai@wedbush.com. You may also submit a written request to the following: Wedbush Securities, Attn: Research Department, 142 W 57th Street, New York, NY 10019.

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