

# The United States AI Enabled Personal Computing Devices Market Size and Ten-Year Forecast October 2024

# **Our Approach**

The Daniel Research Group's EquilibriumSolver (EQS) is a forecasting methodology and application that utilizes a combination of long-term market trends, current unit shipments and revenue data, and analyst assessments of influencing economic, demographic, and market factors. The purpose of the EQS is to generate forecasts that are highly predictive by incorporating both mathematical calculations and insights from external sources.

The **EQS** algorithm considers variables such as Total Available Market (TAM), Penetration, Density, and Replacement Rate trends, as well as actual reported year-to-date data on unit shipments and revenue. Additionally, it incorporates the insights and expertise of our analysts regarding the magnitude and direction of major causal factors influencing the market.

By leveraging this comprehensive set of inputs, the **EQS** algorithm calculates forecasts for key variables and metrics. The algorithm aims to converge on the most likely forecast for each variable based on the provided input data and parameters. The resulting forecasts are expected to be both mathematically consistent and aligned with the narrative developed from external data, information, and analysts' knowledge and insights.

In summary, the core algorithm of the **Daniel Research Group's EquilibriumSolver** is designed to generate highly predictive forecasts by considering a wide range of factors and data, resulting in forecasts that are mathematically sound and consistent with the overall market narrative.

# **The Forecasting Challenge**

Personal Computer, Tablet, and Smartphone vendors are beginning to introduce next generation products capable of supporting artificial intelligence (AI) applications and capabilities. The immediate challenge is to determine the rate at which AI devices will penetrate the overall personal device market in terms of Unit Shipments, Installed Base, and percent of Households and Business buying and using AI devices

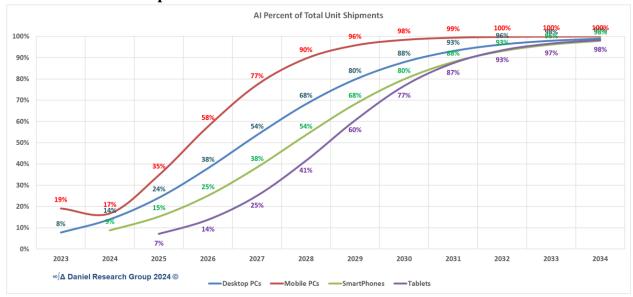
Consumer and Enterprise buyers will have a choice to replace their exiting devices with an AI device or a non-AI device for at least the next two to three years. The rate that they will choose the AI device is almost entirely based on the availability of compelling applications that warrant the higher cost of the AI device, as well as overcoming the trust, privacy, security, and operational concerns. At the moment these compelling applications **do not exist**. AI adoptions has been almost entirely cloud based to date. However, we do expect these compelling applications to become available shortly.

The core EQS algorithm computes Unit Shipments as a function of four variables,

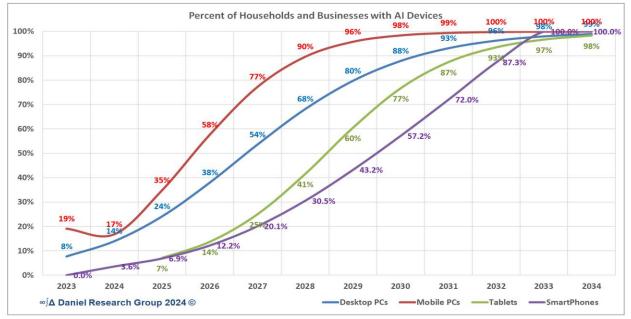
- 1. **Total Available Market (TAM)** The number of Households and Business is unaffected by the introduction of AI devices
- 2. **Penetration Rate** The percent of the TAM that owns and uses at least on device. If AI devices accelerate the Penetration Rate, it will be after compelling applications become available, than the only slightly.
- 3. **Density** The average number of the device owned and used in a Household or Business that own and use at least one device. **DRG** does expect a percentage of users to purchased AI devices early in anticipation of future compelling applications to become available.
- 4. **Replacement Rate DRG** does anticipate a slight increase in the replacement rate reflecting early buyer activity. Longer-term the overall replacement rate will not be effected by the introduction of AI devices and will continue to be reflective of economic conditions.

Existing and new companies are investing in developing and marketing compelling AI applications for devices, as well as the services to support those applications. These companies require accurate estimates of the total available markets, and its' growth, in order to make their investment, development and marketing decisions. Specifically, they require estimates of the number of Households and Business that have purchased and are using AI Devices and the size of the installed base of AI Devices, and their growth rates. **DRG** has added additional **EQS** models to produce these market sizes and growth rates for all the products, form factors and segments it currently covers.

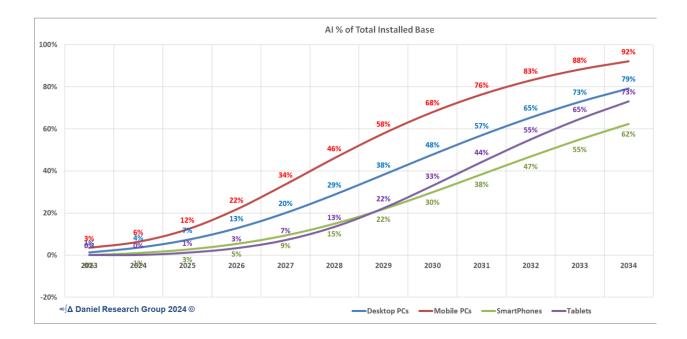
## AI Market Penetration Charts AI Percent of Unit Shipments







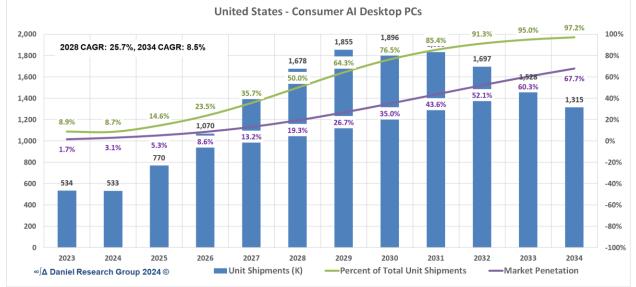
## **AI Percent of Installed Base**



# Forecast Tables and Charts Desktop PCs

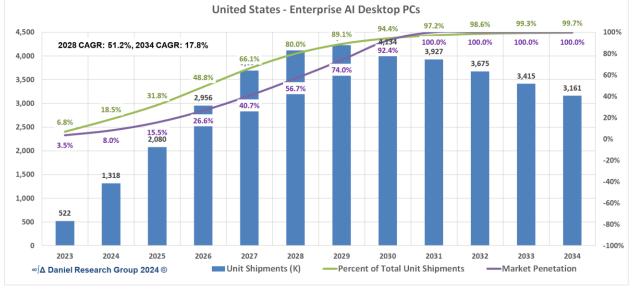
## Consumer

•	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	534	533	770	1,070	1,395	1,678	1,855	1,896	1,833	1,697	1,528	1,315
AGR		0%	45%	39%	30%	20%	11%	2%	-3%	-7%	-10%	-14%
Percent of Total Unit Shipments	8.9%	8.7%	14.6%	23.5%	35.7%	50.0%	64.3%	76.5%	85.4%	91.3%	95.0%	97.2%
Market Penetation	1.7%	3.1%	5.3%	8.6%	13.2%	19.3%	26.7%	35.0%	43.6%	<b>52.1%</b>	60.3%	67.7%



## Enterprise

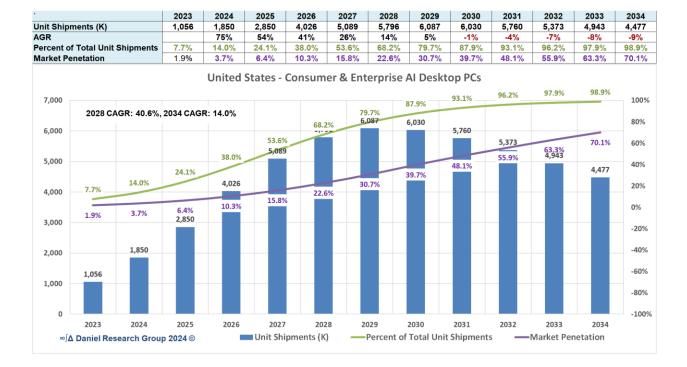
•	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	522	1,318	2,080	2,956	3,694	4,118	4,232	4,134	3,927	3,675	3,415	3,161
AGR		152%	58%	42%	25%	11%	3%	-2%	-5%	-6%	-7%	-7%
Percent of Total Unit Shipments	6.8%	18.5%	31.8%	48.8%	66.1%	80.0%	<b>89.1%</b>	94.4%	97.2%	<b>98.6%</b>	99.3%	99.7%
Market Penetation	3.5%	8.0%	15.5%	26.6%	40.7%	56.7%	74.0%	92.4%	100.0%	100.0%	100.0%	100.0%



## Total

<sup>∞</sup>[ Daniel Research Group

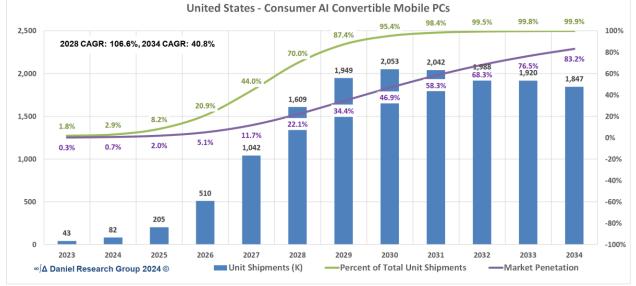
earch Group Page 5 of 22, October 2024 United States AI Enabled Personal Device 2024-2034 Forecast Report



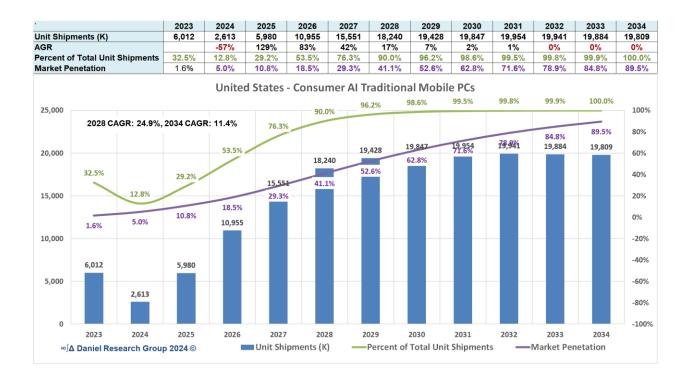
# Mobile PCs

## Consumer Convertible

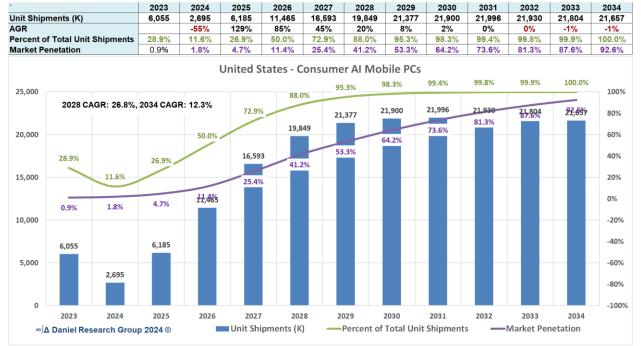
•	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	43	82	205	510	1,042	1,609	1,949	2,053	2,042	1,988	1,920	1,847
AGR		93%	148%	149%	104%	54%	21%	5%	-1%	-3%	-3%	-4%
Percent of Total Unit Shipments	1.8%	2.9%	8.2%	20.9%	44.0%	70.0%	87.4%	95.4%	<b>98.4%</b>	99.5%	99.8%	99.9%
Market Penetation	0.3%	0.7%	2.0%	5.1%	11.7%	22.1%	34.4%	46.9%	58.3%	<b>68.3</b> %	76.5%	83.2%



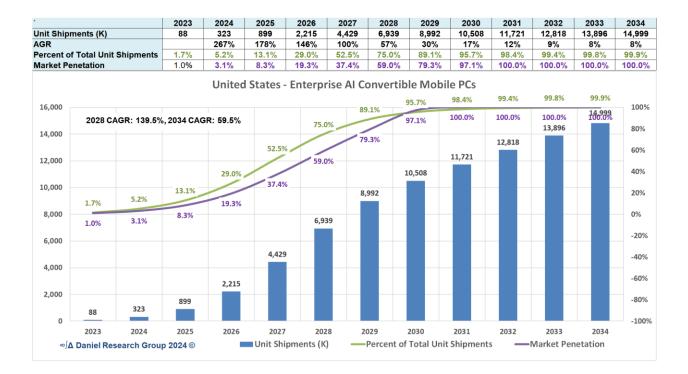
## **Consumer Traditional**



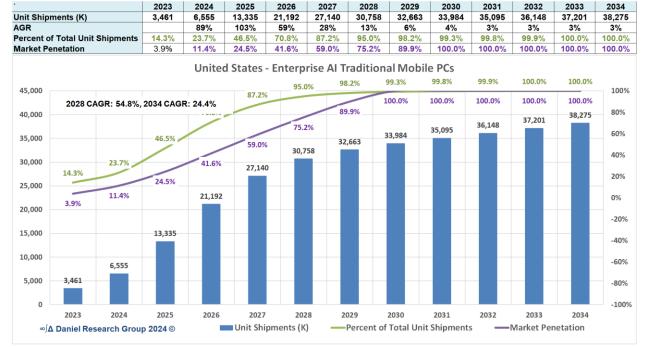
## **Consumer Total**



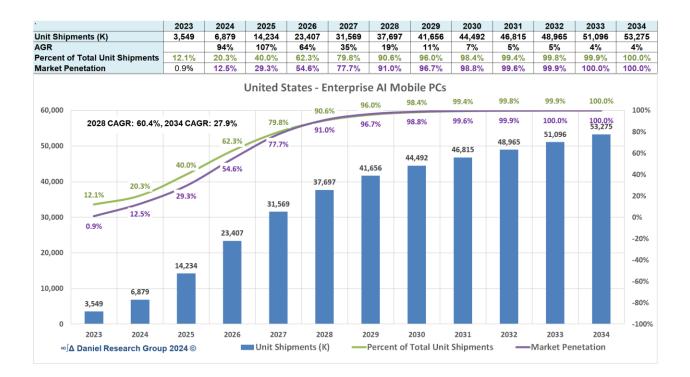
## **Enterprise Convertible**



## **Enterprise Traditional**

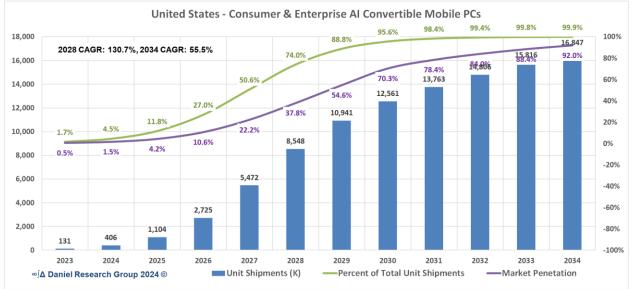


## **Enterprise Total**

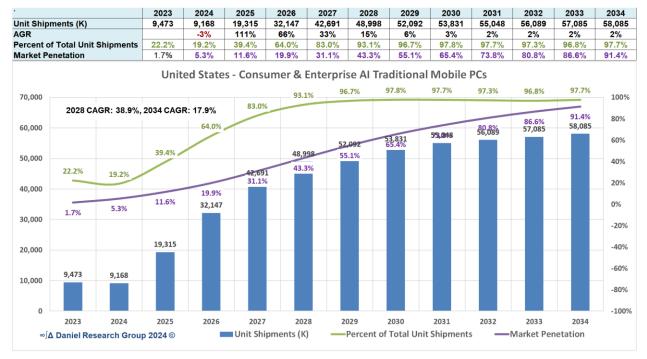


## **Convertible Total**

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	131	406	1,104	2,725	5,472	8,548	10,941	12,561	13,763	14,806	15,816	16,847
AGR		210%	172%	147%	101%	56%	28%	15%	10%	8%	7%	7%
Percent of Total Unit Shipments	1.7%	4.5%	11.8%	27.0%	50.6%	74.0%	88.8%	95.6%	98.4%	99.4%	99.8%	99.9%
Market Penetation	0.5%	1.5%	4.2%	10.6%	22.2%	37.8%	54.6%	70.3%	78.4%	84.0%	88.4%	92.0%

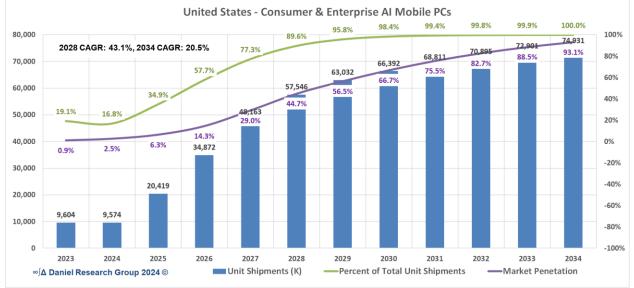


## **Traditional Total**

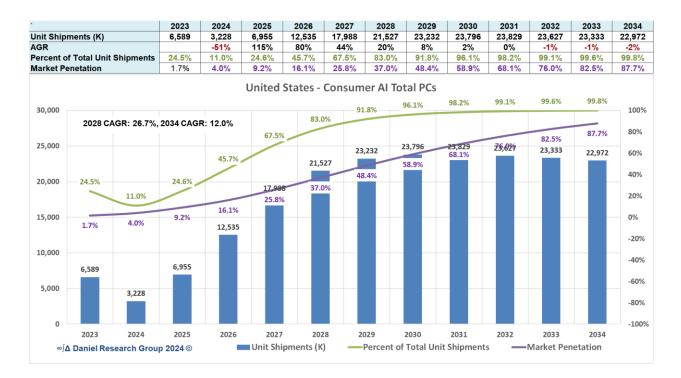


#### **Total**

<b>、</b>	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	9,604	9,574	20,419	34,872	48,163	57,546	63,032	66,392	<b>6</b> 8,811	70,895	72,901	74,931
AGR		0%	113%	71%	38%	19%	10%	5%	4%	3%	3%	3%
Percent of Total Unit Shipments	<b>19.1%</b>	<b>16.8%</b>	34.9%	57.7%	77.3%	89.6%	<b>95</b> .8%	98.4%	99.4%	<b>99</b> .8%	99.9%	100.0%
Market Penetation	0.9%	2.5%	6.3%	14.3%	29.0%	44.7%	56.5%	66.7%	75.5%	82.7%	88.5%	<b>93.1%</b>

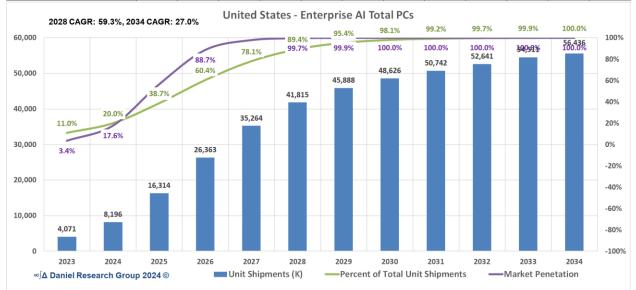


## **Total PCs (Desktops and Mobile PCs)** Consumer

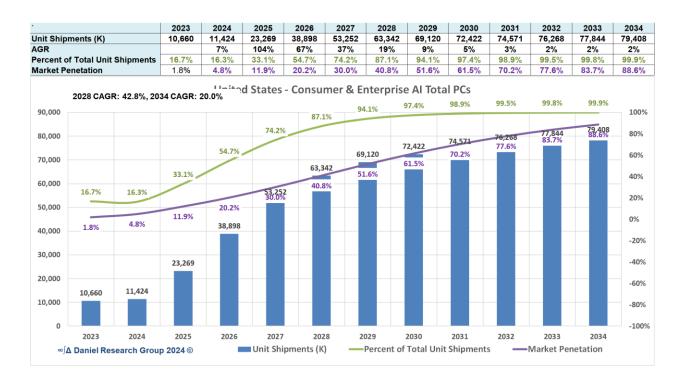


## Enterprise

•	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	4,071	8,196	16,314	26,363	35,264	41,815	45,888	48,626	50,742	52,641	54,511	56,436
AGR		101%	99%	62%	34%	19%	10%	6%	4%	4%	4%	4%
Percent of Total Unit Shipments	11.0%	20.0%	38.7%	60.4%	78.1%	89.4%	95.4%	<b>9</b> 8.1%	99.2%	99.7%	99.9%	100.0%
Market Penetation	3.4%	17.6%	56.4%	88.7%	97.9%	99.7%	99.9%	100.0%	100.0%	100.0%	100.0%	100.0%



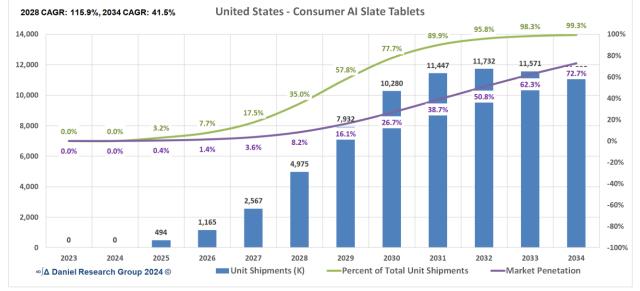
## Total



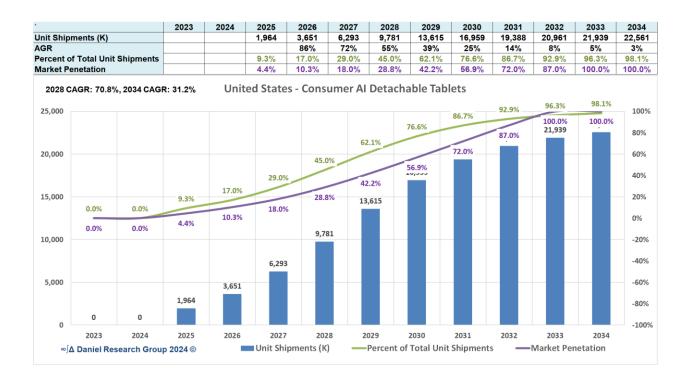
# Tablets

#### **Consumer Slate**

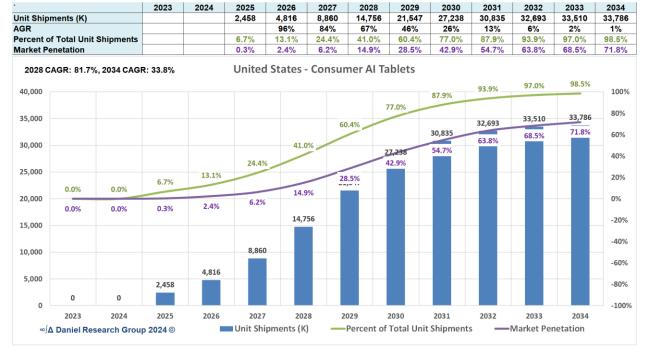
<b>、</b>	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)			494	1,165	2,567	4,975	7,932	10,280	11,447	11,732	11,571	11,225
AGR				136%	120%	94%	<b>59%</b>	30%	11%	2%	-1%	-3%
Percent of Total Unit Shipments			3.2%	7.7%	17.5%	35.0%	57.8%	77.7%	<b>89.9%</b>	<b>95</b> .8%	98.3%	99.3%
Market Penetation			0.4%	1.4%	3.6%	8.2%	<b>16</b> .1%	26.7%	38.7%	50.8%	62.3%	72.7%



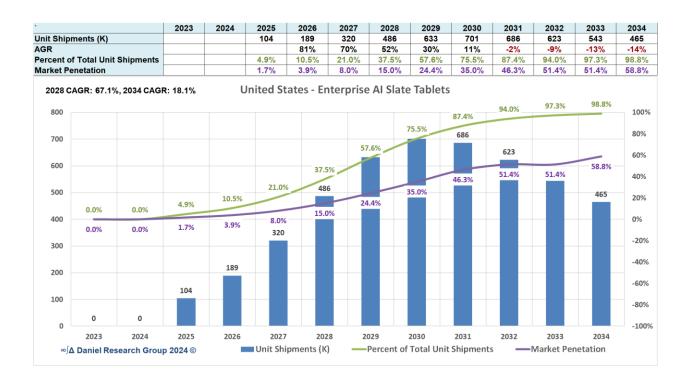
## **Consumer Detachable**



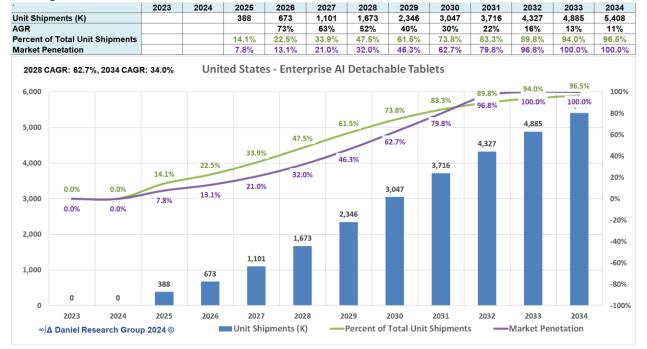
## **Consumer Total**



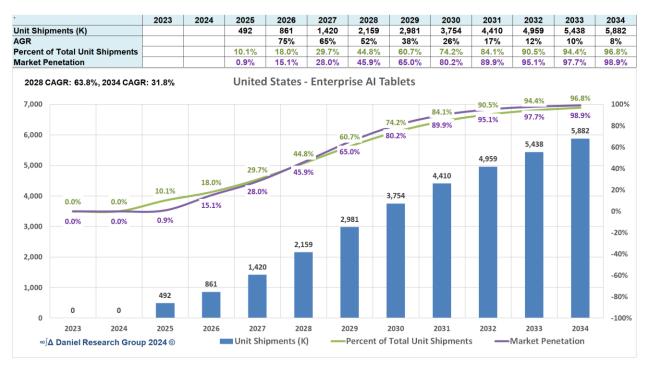
## **Enterprise Slate**



## **Enterprise Detachable**

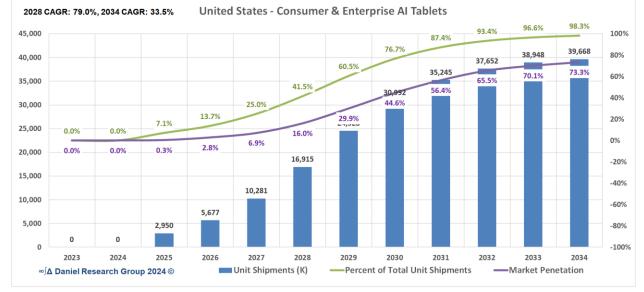


## **Enterprise Total**

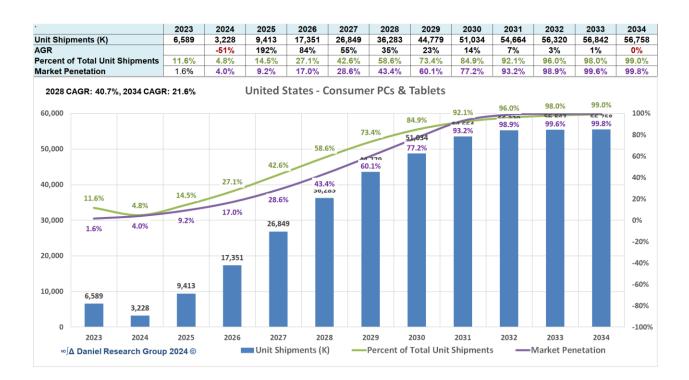


#### Total

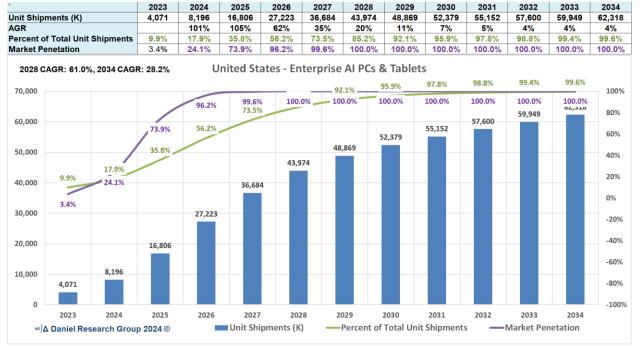
<b>、</b>	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)			2,950	5,677	10,281	16,915	24,528	30,992	35,245	37,652	38,948	39,668
AGR				92%	81%	65%	45%	26%	14%	7%	3%	2%
Percent of Total Unit Shipments			7.1%	13.7%	25.0%	41.5%	60.5%	76.7%	87.4%	93.4%	96.6%	98.3%
Market Penetation			0.3%	2.8%	6.9%	16.0%	29.9%	44.6%	56.4%	65.5%	70.1%	73.3%



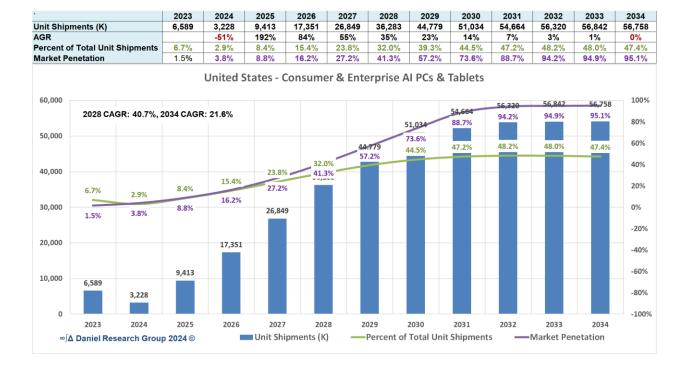
## PCs and Tablets Consumer



## Enterprise



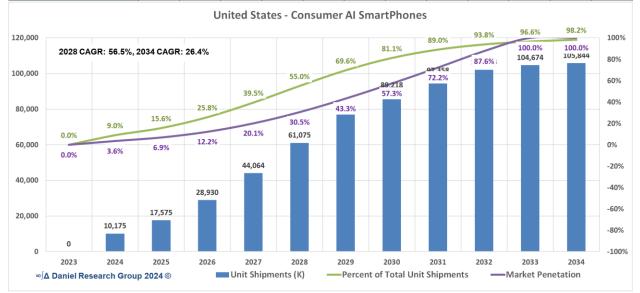
## Total



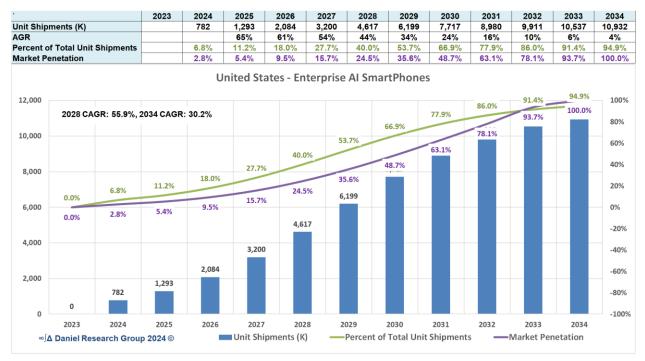
## **Smartphones**

#### Consumer

•	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)		10,175	17,575	28,930	44,064	61,075	76,942	89,218	97,358	102,143	104,674	105,844
AGR			73%	65%	52%	39%	26%	16%	9%	5%	2%	1%
Percent of Total Unit Shipments		9.0%	15.6%	25.8%	39.5%	55.0%	69.6%	81.1%	89.0%	93.8%	96.6%	98.2%
Market Penetation		3.6%	6.9%	12.2%	20.1%	30.5%	43.3%	57.3%	72.2%	87.6%	100.0%	100.0%

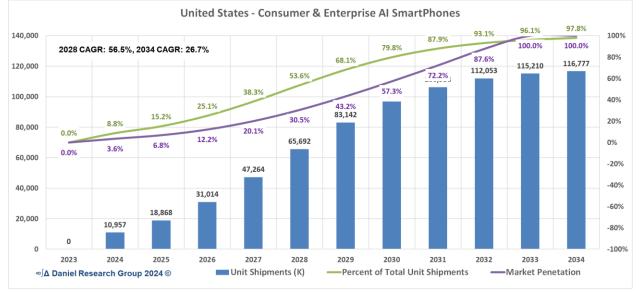


## Enterprise

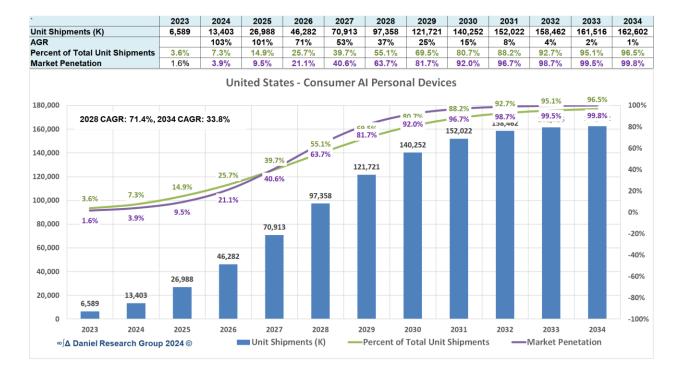


#### Total

<b>,</b>	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)		10,957	18,868	31,014	47,264	65,692	83,142	96,935	106,338	112,053	115,210	116,777
AGR			72%	64%	52%	39%	27%	17%	10%	5%	3%	1%
Percent of Total Unit Shipments		8.8%	15.2%	<b>25.1%</b>	38.3%	<b>53.6%</b>	<b>6</b> 8.1%	<b>79.8%</b>	87.9%	93.1%	96.1%	97.8%
Market Penetation		3.6%	<b>6.</b> 8%	12.2%	20.1%	30.5%	43.2%	57.3%	72.2%	87.6%	100.0%	100.0%

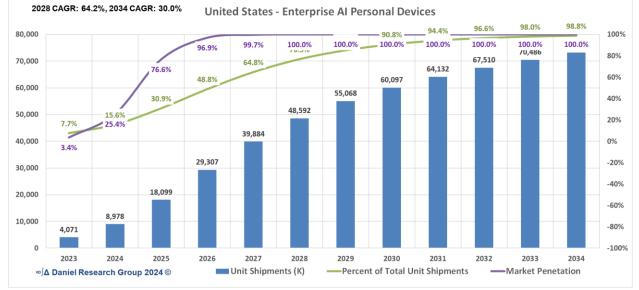


## **Total Personal Devices (PCs, Tablets, and Phones)** Consumer

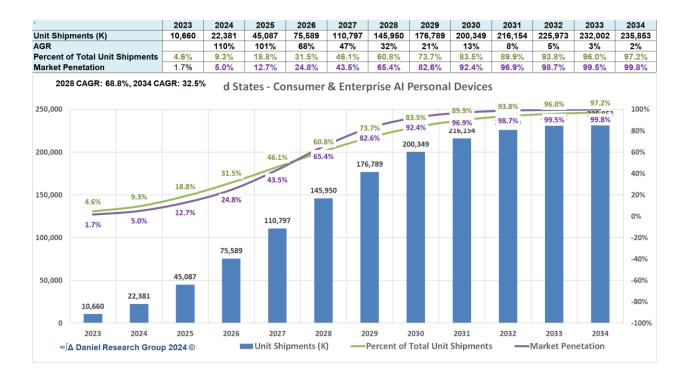


## Enterprise

<b>x</b>	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	4,071	8,978	18,099	29,307	39,884	48,592	55,068	60,097	64,132	67,510	70,486	73,251
AGR		121%	102%	62%	36%	22%	13%	9%	7%	5%	4%	4%
Percent of Total Unit Shipments	7.7%	15.6%	30.9%	48.8%	64.8%	76.9%	85.2%	90.8%	94.4%	96.6%	<b>98.0%</b>	<b>9</b> 8.8%
Market Penetation	3.4%	25.4%	76.6%	96.9%	99.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



## Total



# **About Daniel Research Group**

**Daniel Research Group** is a market research and consulting firm primarily servicing technology clients. Our focus is developing custom market models and forecasts. We support clients three ways.

- 1. We work independently or collaboratively with the client's own analysts to **produce custom** technology product/service **market models and forecasts.**
- 2. We work collaboratively with the client's own analysts to **design and develop the modeling applications** that they will use to develop their own market models and forecasts.
- 3. We **train client's analysts** in the theory and practice of technology market modeling and forecasting.

Most of our work utilizes the inventory of proprietary methodologies and algorithms that we have developed over more than 35 years. We have built technology forecasting market models for many major technology vendors, market research firms, and industry organizations. While our core competency is forecasting, our subject experience covers the entire technology and technology-enabled product/service landscape. We also support our engagements with traditional qualitative and quantitative research, as well as tactical and strategic consulting services.

## **Stephen J. Daniel - President**

With over four decades in the Information Technology Industry, Mr. Daniel has developed a unique blend of Market and Technology experience coupled with a deep understanding of Market Research Methodology. His primary strength is in understanding the decision-making context within which the results of his research will be applied. This is manifested by his ability to design and execute studies that precisely meet client objectives in a timely fashion and at reasonable costs.



Mr. Daniel received his BS in Finance from Northeastern University and earned an MBA in Quantitative Analysis from New York University. He is a member of the American Statistical Association, American Economic Association, The Market Research Association of America, the American Marketing Association, National Association for Business Economics, and the Qualitative Research Association of America.

## **Contact Information**

http://www.danielresearchgroup.com/ Steve@DanielRG.com (617) 484-6225

