



# **United States Personal Device Market Size and Forecast, 1975-2028 September 2024 Update**

## **Table of Contents**

[\*\*Our Approach\*\*](#)

[\*\*The Forecasting Challenge\*\*](#)

[\*\*Major Influencing Factors and Assumptions\*\*](#)

[\*\*Market Segment Forecast Overview\*\*](#)

[\*\*Product Forecast Tables and Charts\*\*](#)

[\*\*Desktop PCs\*\*](#)

[\*\*Mobile PCs\*\*](#)

[\*\*Tablets\*\*](#)

[\*\*Mobile Phones\*\*](#)

[\*\*Market Aggregations\*\*](#)

[\*\*Market Model Variables\*\*](#)

[\*\*Total Available Market \(TAM\)\*\*](#)

[Penetration](#)  
[Density](#)  
[Replacement Rates](#)  
[Unit Shipments](#)  
[Installed Base](#)

[Methodology](#)

[About Daniel Research Group](#)

## Our Approach

The **Daniel Research Group's EquilibriumSolver (EQS)** is a forecasting tool 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 trend, 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

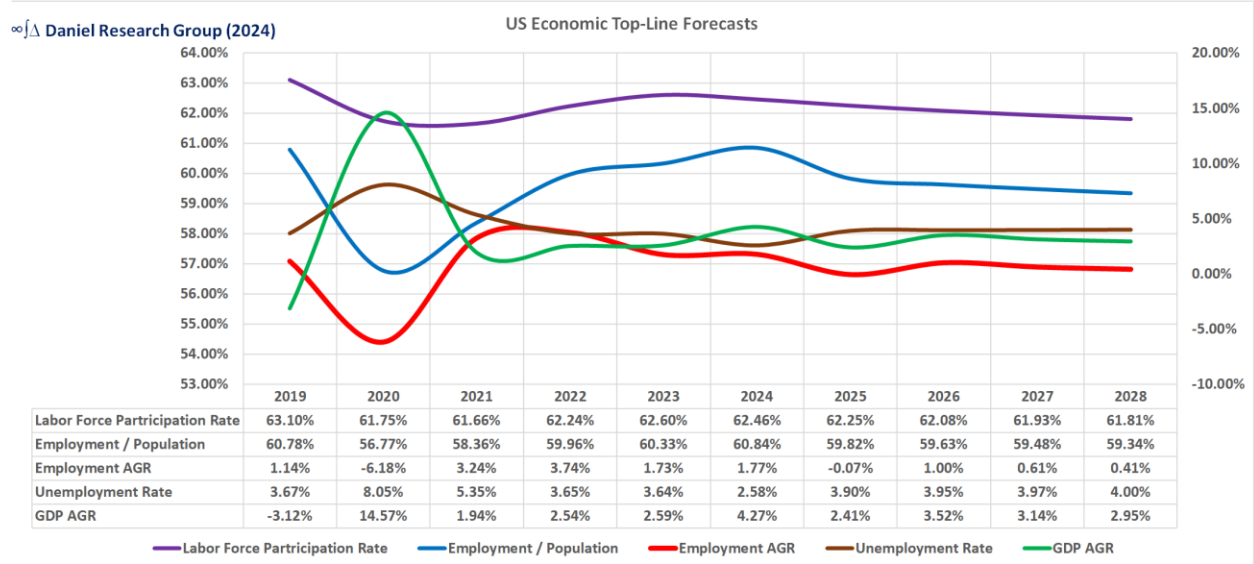
The major forecasting challenge over the past three years has been understanding the disruptive changes to household and business computing and communication personal device demand caused by the pandemic and the subsequent policies and procedures designed to mitigate its damaging effects. That period is now over and the new challenge is to understand how AI Enabled Personal Computing Devices (AIEPD), will restore demand to pre-pandemic levels and above.

Looking longer-term we see AI as the next major destructive/innovation event. As in the past, there is a lag, usually longer than expected, from the introduction of a new innovation to the full realization of its potential. Yet, AI (or the promise of AI) is here, and will have a significant impact on the demand for Personal Computing Devices by individual, households, businesses, and government entities.

Our current forecast reflects the increase in demand attributed to AIEPD. **DRG** has also updated its Market Size and Ten-Year forecast of AI Enabled PCs, Tablets and Phones with actual 24Q1 data. The report is available free from the [content page on DRG's website](#). 14% of all Personal Device purchased in 2024 will be AI Enabled and will be purchased by 6% of all Households and Business. The percents will grow to 18% and 8% respectively by 2028, and 84% and 46% respectively by 2034.

# Major Influencing Factors and Assumptions

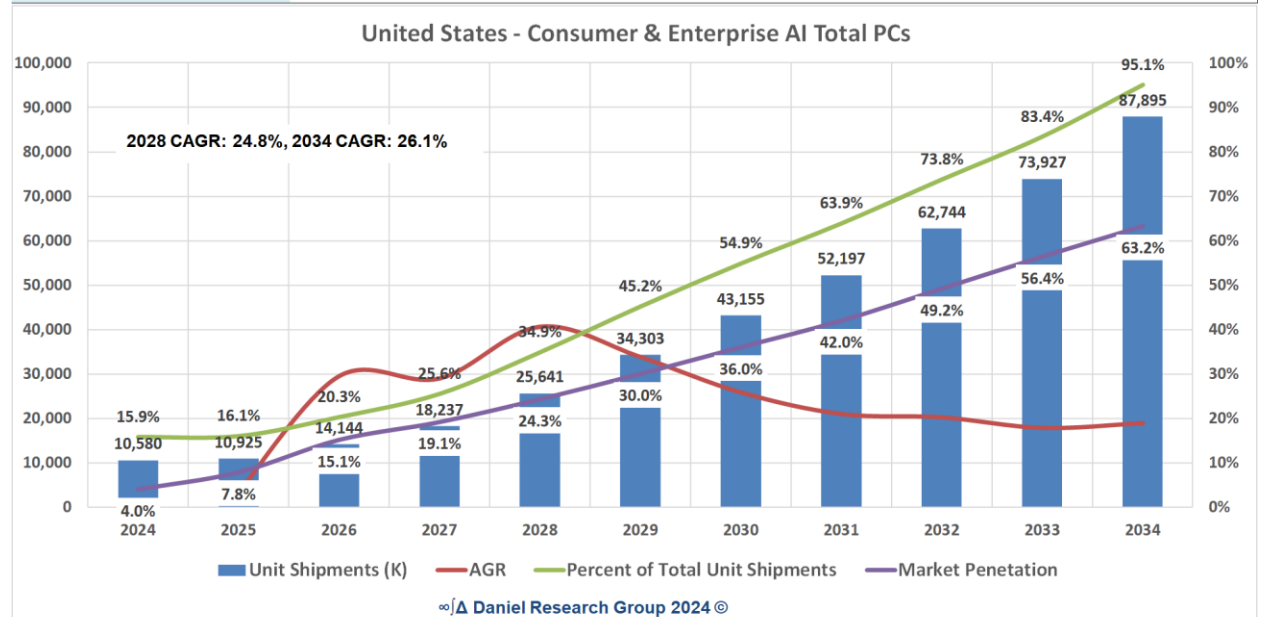
## The US Economy



**DRG** develops its own forecast for Households and Business that are the Total Available Market for Personal Devices. Our forecasts are based on current economic forecast from government and major financial institutions. Our **Business Economic Demographic Database (BEDD)** report is also available [free from our web site](#).

### AI Enabled Total PCs (Desktop and Mobile)

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Unit Shipments (K)	10,580	10,925	14,144	18,237	25,641	34,303	43,155	52,197	62,744	73,927	87,895
AGR		3%	29%	29%	41%	34%	26%	21%	20%	18%	19%
Percent of Total Unit Shipments	15.9%	16.1%	20.3%	25.6%	34.9%	45.2%	54.9%	63.9%	73.8%	83.4%	95.1%
Market Penetration	4.0%	7.8%	15.1%	19.1%	24.3%	30.0%	36.0%	42.0%	49.2%	56.4%	63.2%





# United States Personal Device Market

## Market Segment Forecast Overview

### Total Market

		United States Total Personal Devices Unit Shipments (K)							
		2023	2024	2025	2026	2027	2028	CAGR ('22-'27)	Trend
<b>Desktop PCs</b>									
Desktop PC	Desktop PC	13,674	12,913	11,259	9,755	8,436	7,290	-11.8%	
AGR	AGR	-14.8%	-5.6%	-12.8%	-13.4%	-13.5%	-13.6%		
<b>Mobile PCs</b>									
Traditional Mobile PCs		42,701	45,119.2	47,482.4	49,698.9	51,931.2	54,240.5	4.9%	
AGR		-12.9%	5.7%	5.2%	4.7%	4.5%	4.4%		
Convertible Mobile PCs		7,597	8,665	9,246	10,090	10,970	11,901	9.4%	
AGR		-14.2%	14.1%	6.7%	9.1%	8.7%	8.5%		
	<b>Total Mobile PCs</b>	50,298	53,784	56,728	59,789	62,902	66,142	5.6%	
	AGR	-13.1%	6.9%	5.5%	5.4%	5.2%	5.2%		
<b>Total PCs</b>									
	<b>Total PCs</b>	63,972	66,698	67,987	69,543	71,337	73,432	2.8%	
	AGR	-13.5%	4.3%	1.9%	2.3%	2.6%	2.9%		
<b>Tablets</b>									
Detachable		19,233	23,335	21,710	21,823	21,788	21,650	2.4%	
AGR		-21.3%	21.3%	-7.0%	0.5%	-0.2%	-0.6%		
Slate		14,694	14,836	15,541	14,787	14,031	13,296	-2.0%	
AGR		-47.1%	1.0%	4.8%	-4.9%	-5.1%	-5.2%		
	<b>Total Tablets</b>	33,927	38,170	37,252	36,610	35,819	34,946	0.6%	
	AGR	-35.0%	12.5%	-2.4%	-1.7%	-2.2%	-2.4%		
<b>Total Computers</b>									
	<b>Total Computers</b>	97,899	104,868	105,238	106,153	107,157	108,378	2.1%	
	AGR	-13.5%	4.3%	1.9%	2.3%	2.6%	2.9%		
<b>Mobile Phones</b>									
	<b>Standard Phone</b>	5,139	4,189	4,259	4,326	4,384	4,438	-2.9%	
	AGR	25.3%	-18.5%	1.7%	1.6%	1.3%	1.2%		
	<b>SmartPhones</b>	130,594	127,045	126,017	124,893	123,488	121,966	-1.4%	
	AGR	-6.9%	-2.7%	-0.8%	-0.9%	-1.1%	-1.2%		
	<b>Total Mobile Phones</b>	135,733	131,235	130,275	129,219	127,872	126,404	-1.4%	
	AGR	-6.0%	-3.3%	-0.7%	-0.8%	-1.0%	-1.1%		
<b>Total Devices</b>									
	<b>Total Devices</b>	233,632	236,102	235,514	235,372	235,028	234,781	0.1%	
	AGR	-13.6%	1.1%	-0.2%	-0.1%	-0.1%	-0.1%		

© Daniel Research Group (2024)

# Consumer Segment

		United States Consumer Personal Devices Unit Shipments (K)							
		2023	2024	2025	2026	2027	2028	CAGR ('22-'27)	Trend
<b>Desktop PCs</b>									
Desktop PC	Desktop PC	5,990	5,594	4,796	4,053	3,416	2,877	-13.6%	
AGR	AGR	-14.8%	-6.6%	-14.3%	-15.5%	-15.7%	-15.8%		
<b>Mobile PCs</b>									
Traditional Mobile PCs		18,526	19,388.5	19,996.4	20,331.2	20,618.2	20,881.8	2.4%	
AGR		-14.0%	4.7%	3.1%	1.7%	1.4%	1.3%		
Convertible Mobile PCs		2,431	2,658	2,415	2,404	2,388	2,368	-0.5%	
AGR		-8.2%	9.3%	-9.1%	-0.5%	-0.7%	-0.8%		
	<b>Total Mobile PCs</b>	20,958	22,046	22,411	22,735	23,006	23,250	2.1%	
	AGR	-13.4%	5.2%	1.7%	1.4%	1.2%	1.1%		
<b>Total PCs</b>									
	<b>Total PCs</b>	26,948	27,640	27,207	26,788	26,422	26,127	-0.6%	
	AGR	-13.7%	2.6%	-1.6%	-1.5%	-1.4%	-1.1%		
<b>Tablets</b>									
Detachable		15,929	20,753	19,020	19,022	18,878	18,631	3.2%	
AGR		-18.5%	30.3%	-8.3%	0.0%	-0.8%	-1.3%		
Slate		13,752	13,667	14,330	13,607	12,885	12,184	-2.4%	
AGR		-46.5%	-0.6%	4.9%	-5.0%	-5.3%	-5.4%		
	<b>Total Tablets</b>	29,681	34,419	33,350	32,629	31,764	30,815	0.8%	
	AGR	-34.4%	16.0%	-3.1%	-2.2%	-2.7%	-3.0%		
<b>Total Computers</b>									
Total Computers		56,629	62,060	60,557	59,417	58,186	56,943	0.1%	
AGR		-13.7%	2.6%	-1.6%	-1.5%	-1.4%	-1.1%		
<b>Mobile Phones</b>									
	<b>Standard Phone</b>	5,067	4,144	4,209	4,271	4,323	4,372	-2.9%	
	AGR	25.3%	-18.2%	1.6%	1.5%	1.2%	1.1%		
	<b>SmartPhones</b>	118,891	115,411	114,396	113,296	111,941	110,481	-1.5%	
	AGR	-7.1%	-2.9%	-0.9%	-1.0%	-1.2%	-1.3%		
Total Mobile Phones		123,958	119,556	118,605	117,566	116,264	114,853	-1.5%	
AGR		-6.1%	-3.6%	-0.8%	-0.9%	-1.1%	-1.2%		
<b>Total Devices</b>									
Total Devices		180,587	181,615	179,162	176,983	174,450	171,795	-1.0%	
AGR		-13.4%	0.6%	-1.4%	-1.2%	-1.4%	-1.5%		

© Daniel Research Group © (2024)



# Enterprise Segment

		United States Enterprise Personal Devices Unit Shipments (K)							
		2023	2024	2025	2026	2027	2028	CAGR ('22-'27)	Trend
<b>Desktop PCs</b>									
Desktop PC	Desktop PC	7,684	7,319	6,463	5,702	5,019	4,413	-10.5%	
AGR	AGR	-14.9%	-4.7%	-11.7%	-11.8%	-12.0%	-12.1%		
<b>Mobile PCs</b>									
Traditional Mobile PCs		24,175	25,730.7	27,486.0	29,367.6	31,313.0	33,358.7	6.7%	
AGR	AGR	-12.0%	6.4%	6.8%	6.8%	6.6%	6.5%		
Convertible Mobile PCs		5,165	6,007	6,831	7,686	8,583	9,533	13.0%	
AGR	AGR	-16.8%	16.3%	13.7%	12.5%	11.7%	11.1%		
<b>Total Mobile PCs</b>		29,340	31,738	34,317	37,053	39,896	42,891	7.9%	
AGR	AGR	-12.9%	8.2%	8.1%	8.0%	7.7%	7.5%		
<b>Total PCs</b>									
Total PCs		37,024	39,057	40,780	42,756	44,915	47,304	5.0%	
AGR	AGR	-13.3%	5.5%	4.4%	4.8%	5.1%	5.3%		
<b>Tablets</b>									
Detachable		3,304	2,582	2,690	2,801	2,910	3,019	-1.8%	
AGR	AGR	-32.3%	-21.9%	4.2%	4.1%	3.9%	3.8%		
Slate		942	1,169	1,212	1,180	1,146	1,112	3.4%	
AGR	AGR	-54.0%	24.1%	3.6%	-2.6%	-2.9%	-3.0%		
<b>Total Tablets</b>		4,246	3,751	3,902	3,981	4,056	4,131	-0.5%	
AGR	AGR	-38.7%	-11.7%	4.0%	2.0%	1.9%	1.9%		
<b>Total Computers</b>									
Total Computers		41,270	42,808	44,682	46,737	48,971	51,435	4.5%	
AGR	AGR	-13.3%	5.5%	4.4%	4.8%	5.1%	5.3%		
<b>Mobile Phones</b>									
Standard Phone		73	45	50	55	60	66	-1.8%	
AGR	AGR	25.3%	-37.9%	10.3%	10.2%	10.0%	9.8%		
SmartPhones		11,702	11,634	11,621	11,598	11,548	11,485	-0.4%	
AGR	AGR	-4.4%	-0.6%	-0.1%	-0.2%	-0.4%	-0.5%		
<b>Total Mobile Phones</b>		11,775	11,679	11,670	11,653	11,608	11,551	-0.4%	
AGR	AGR	-4.2%	-0.8%	-0.1%	-0.2%	-0.4%	-0.5%		
<b>Total Devices</b>									
Total Devices		53,044	54,487	56,352	58,389	60,578	62,986	3.5%	
AGR	AGR	-14.4%	2.7%	3.4%	3.6%	3.7%	4.0%		

© Daniel Research Group © (2024)

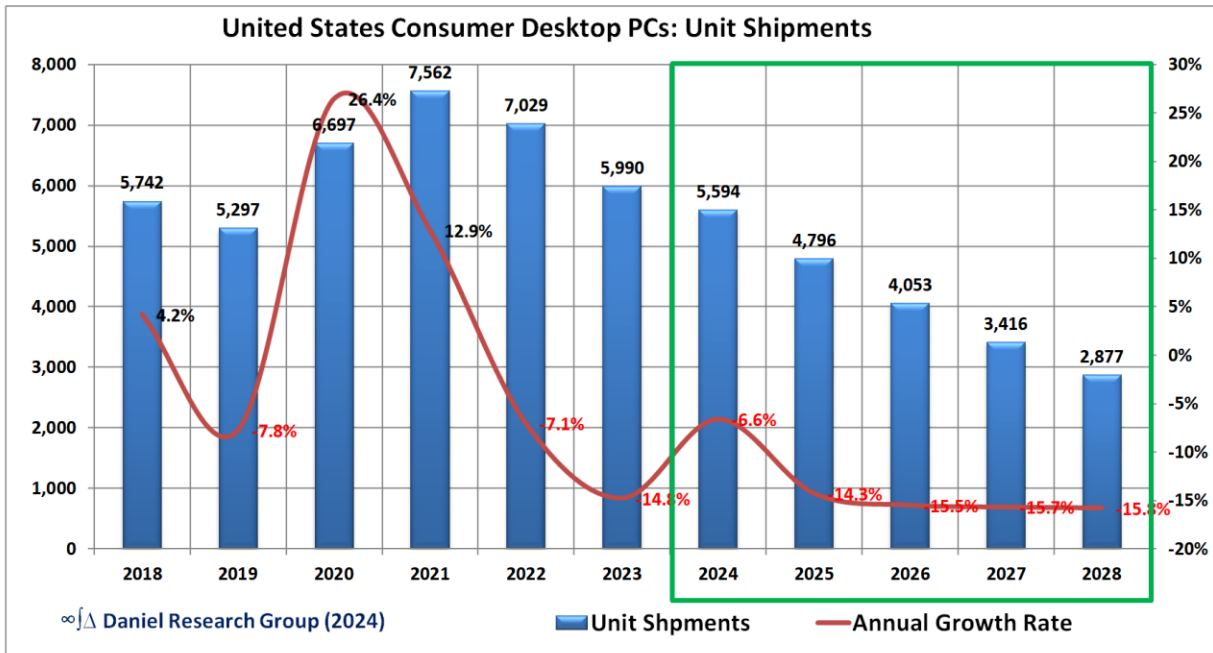
# Product Forecast Tables and Charts

## Desktop PCs

### Consumer

United States Consumer Desktop PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	5,990	5,594	4,796	4,053	3,416	2,877	-15.3%	
AGR	-14.8%	-6.6%	-14.3%	-15.5%	-15.7%	-15.8%		
<b>Revenue (\$M)</b>	7,268	6,973	6,143	5,333	4,620	3,997	-13.0%	
AGR	-16.0%	-4.1%	-11.9%	-13.2%	-13.4%	-13.5%		
<b>Average Price (\$)</b>	1,213	1,247	1,281	1,316	1,352	1,389	2.7%	
AGR	-1.5%	2.7%	2.7%	2.7%	2.7%	2.7%		
<b>Installed Base (K)</b>	44,151	45,832	46,726	46,899	44,437	41,791	-2.3%	
AGR	5.3%	3.8%	1.9%	0.4%	-5.2%	-6.0%		
<b>Removal Age (Y)</b>	4.79	5.37	6.10	6.88	10.89	11.08	19.8%	
AGR	-7.6%	12.2%	13.6%	12.8%	58.2%	1.7%		
<b>Average Installed Base Age (Y)</b>	6.31	6.71	7.15	7.64	7.76	7.92	4.2%	
AGR	6.4%	6.3%	6.6%	6.8%	1.5%	2.1%		
<b>Replacement Cycle Length (Y)</b>	12.69	12.71	12.97	13.09	8.56	8.57	-9.4%	
AGR	48.3%	0.2%	2.1%	0.9%	-34.6%	0.1%		
<b>Units per Households (#)</b>	1.28	1.47	1.67	1.86	1.98	2.09	9.1%	
AGR	15.5%	14.7%	13.3%	11.9%	6.0%	5.5%		
	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>Change '20-'25</b>	<b>Trend</b>
<b>Market Penetration (%)</b>	25.9%	23.2%	20.7%	18.4%	16.3%	14.4%	-11.5%	

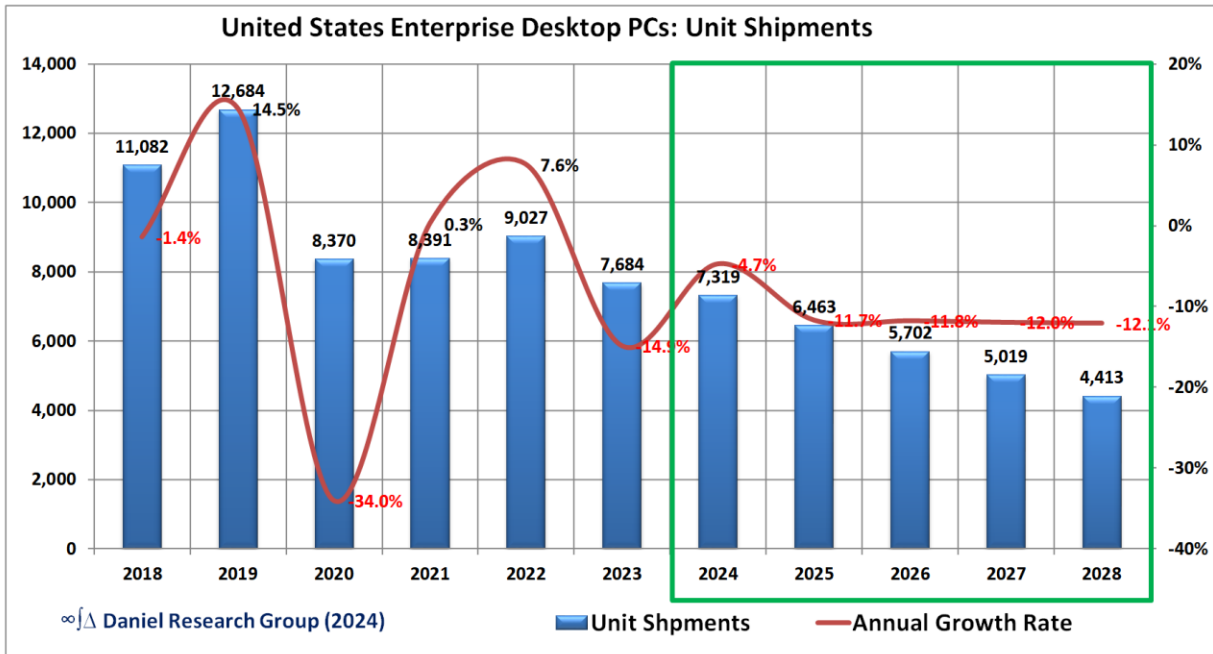
∞Δ Daniel Research Group ©(2024)



# Enterprise

United States Enterprise Desktop PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	7,684	7,319	6,463	5,702	5,019	4,413	-11.9%	
AGR	-14.9%	-4.7%	-11.7%	-11.8%	-12.0%	-12.1%		
<b>Revenue (\$M)</b>	5,950	5,815	5,268	4,768	4,306	3,884	-9.6%	
AGR	-20.1%	-2.3%	-9.4%	-9.5%	-9.7%	-9.8%		
<b>Average Price (\$)</b>	774	794	815	836	858	880	2.6%	
AGR	-6.1%	2.6%	2.6%	2.6%	2.6%	2.6%		
<b>Installed Base (K)</b>	79,913	78,289	73,145	65,417	60,106	54,827	-8.5%	
AGR	-1.3%	-2.0%	-6.6%	-10.6%	-8.1%	-8.8%		
<b>Removal Age (Y)</b>	7.10	7.67	10.65	11.95	10.78	10.98	9.4%	
AGR	-27.7%	8.0%	38.9%	12.2%	-9.8%	1.9%		
<b>Average Installed Base Age (Y)</b>	8.10	8.51	8.57	8.34	8.39	8.44	-0.2%	
AGR	5.7%	5.0%	0.8%	-2.7%	0.7%	0.5%		
<b>Replacement Cycle Length (Y)</b>	10.11	9.75	7.30	5.87	6.82	6.66	-9.1%	
AGR	63.5%	-3.5%	-25.1%	-19.6%	16.1%	-2.4%		
<b>Units per Businesses (#)</b>	32.83	35.80	37.90	38.80	41.27	43.95	5.3%	
AGR	8.4%	9.0%	5.9%	2.4%	6.4%	6.5%		
	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>Change '20-'25</b>	<b>Trend</b>
<b>Market Penetration (%)</b>	36.0%	31.7%	27.7%	24.0%	20.7%	17.7%	-18.3%	

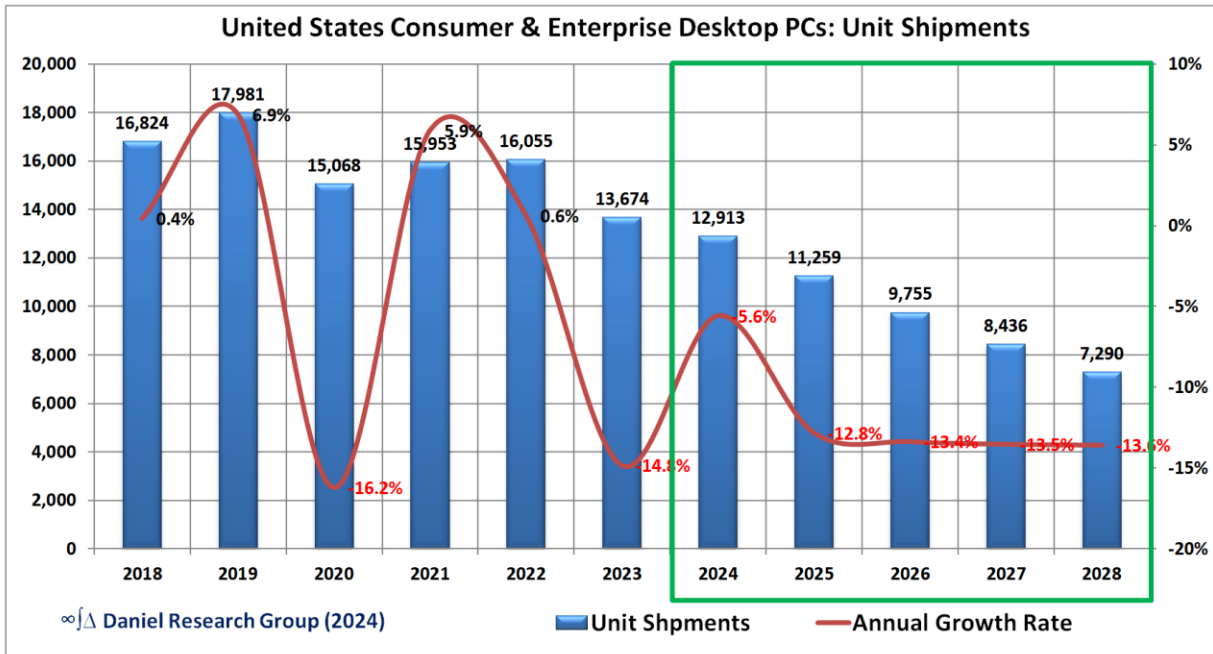
∞∫Δ Daniel Research Group ©(2024)



# Total Desktop PCs

United States Consumer & Enterprise Desktop PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	13,674	12,913	11,259	9,755	8,436	7,290	-13.3%	
AGR	-14.8%	-5.6%	-12.8%	-13.4%	-13.5%	-13.6%		
<b>Revenue (\$M)</b>	13,218	12,788	11,410	10,101	8,925	7,881	-11.4%	
AGR	-17.9%	-3.3%	-10.8%	-11.5%	-11.6%	-11.7%		
<b>Average Price (\$)</b>	967	990	1,013	1,036	1,058	1,081	2.2%	
AGR	-3.6%	2.4%	2.3%	2.2%	2.2%	2.2%		
<b>Installed Base (K)</b>	124,064	124,121	119,871	112,316	104,544	96,617	-6.1%	
AGR	0.9%	0.0%	-3.4%	-6.3%	-6.9%	-7.6%		
<b>Removal Age (Y)</b>	6.32	6.90	7.32	13.73	10.84	11.04	12.5%	
AGR	4.5%	9.1%	6.1%	87.7%	-21.1%	1.9%		
<b>Average Installed Base Age (Y)</b>	7.59	7.97	8.44	8.04	8.12	8.20	0.7%	
AGR	5.5%	5.1%	5.8%	-4.7%	0.9%	1.0%		
<b>Replacement Cycle Length (Y)</b>	10.88	10.65	8.73	7.49	7.45	7.35	-8.9%	
AGR	60.0%	-2.1%	-18.1%	-14.2%	-0.5%	-1.3%		
<b>Units per Households &amp; Businesses (#)</b>	3.37	3.72	4.00	4.18	4.37	4.54	5.1%	
AGR	10.8%	10.6%	7.4%	4.6%	4.3%	3.9%		
	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>Change '20-'25</b>	<b>Trend</b>
<b>Market Penetration (%)</b>	26.4%	23.6%	21.0%	18.7%	16.5%	14.6%	-11.8%	

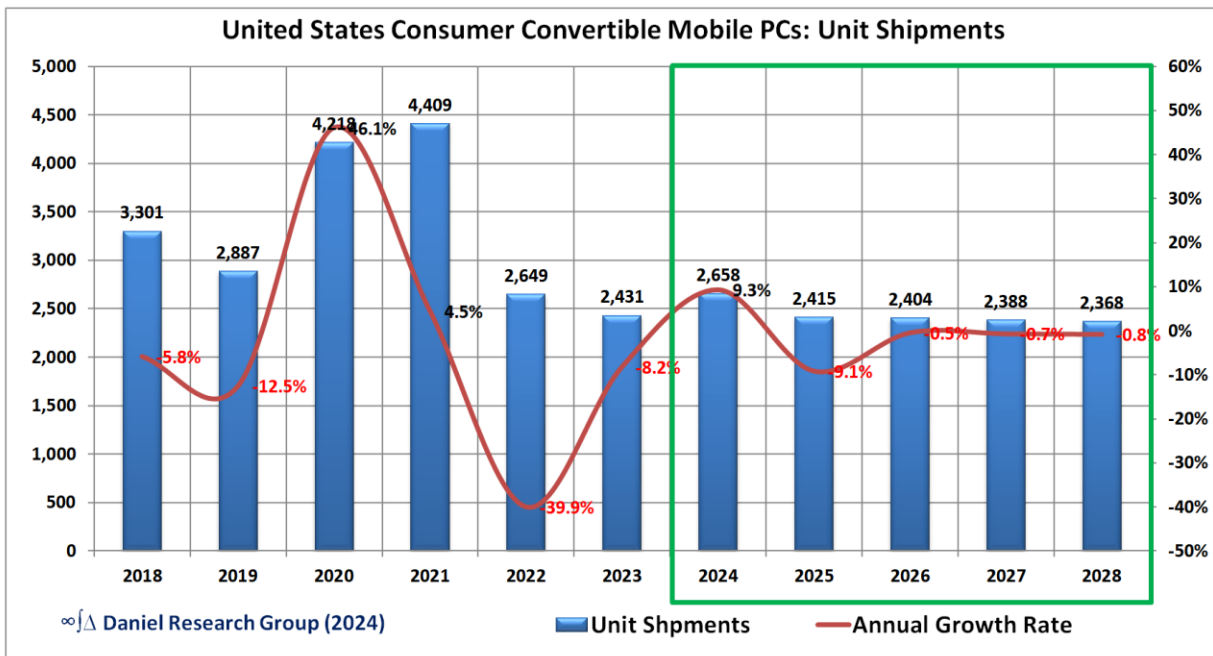
∞ ∫ Δ Daniel Research Group ©(2024)



# Mobile PC Consumer Convertible

United States Consumer Convertible Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	2,431	2,658	2,415	2,404	2,388	2,368	-2.8%	
AGR	-8.2%	9.3%	-9.1%	-0.5%	-0.7%	-0.8%		
<b>Revenue (\$M)</b>	1,698	1,889	1,745	1,764	1,778	1,789	-1.3%	
AGR	-18.9%	11.2%	-7.6%	1.1%	0.8%	0.6%		
<b>Average Price (\$)</b>	698	711	722	734	745	755	1.5%	
AGR	-11.6%	1.8%	1.7%	1.6%	1.5%	1.4%		
<b>Installed Base (K)</b>	10,166	9,895	9,334	8,341	7,688	7,111	-7.9%	
AGR	-0.6%	-2.7%	-5.7%	-10.6%	-7.8%	-7.5%		
<b>Removal Age (Y)</b>	3.36	4.40	4.69	5.15	4.66	4.56	0.9%	
AGR	-24.2%	31.0%	6.6%	9.7%	-9.5%	-2.2%		
<b>Average Installed Base Age (Y)</b>	3.77	3.87	3.92	3.70	3.57	3.38	-3.3%	
AGR	13.2%	2.5%	1.4%	-5.7%	-3.6%	-5.2%		
<b>Replacement Cycle Length (Y)</b>	5.08	4.38	4.14	3.46	3.53	3.41	-6.0%	
AGR	36.8%	-13.9%	-5.5%	-16.5%	2.1%	-3.2%		
<b>Units per Households (#)</b>	1.00	1.00	1.00	1.00	1.00	1.00		
AGR								
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	7.6%	7.4%	6.9%	6.1%	5.6%	5.1%	-2.5%	

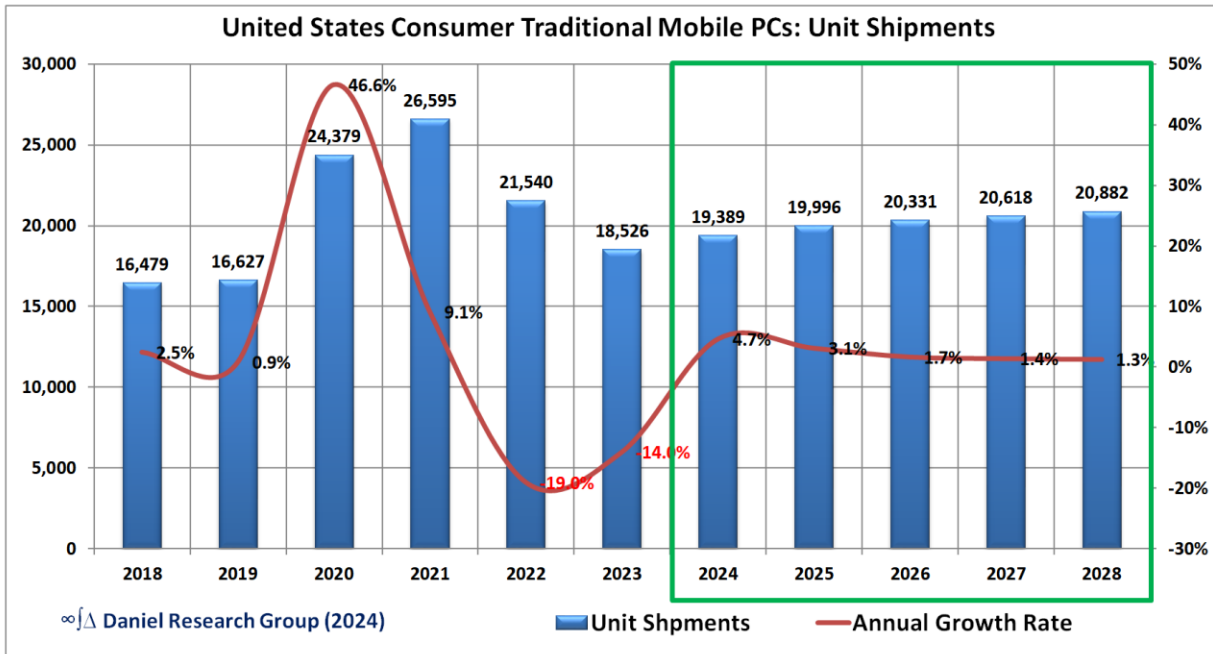
∞ ∫ Δ Daniel Research Group ©(2024)



# Consumer Traditional

United States Consumer Traditional Mobile PCs									
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend	
<b>Unit Shipments (K)</b>	18,526	19,389	19,996	20,331	20,618	20,882	1.9%		
AGR	-14.0%	4.7%	3.1%	1.7%	1.4%	1.3%			
<b>Revenue (\$M)</b>	21,877	24,576	27,208	29,695	32,326	35,144	9.4%		
AGR	-14.7%	12.3%	10.7%	9.1%	8.9%	8.7%			
<b>Average Price (\$)</b>	1,181	1,268	1,361	1,461	1,568	1,683	7.3%		
AGR	-0.8%	7.3%	7.3%	7.3%	7.3%	7.3%			
<b>Installed Base (K)</b>	96,177	96,701	96,845	96,571	92,869	93,262	-0.9%		
AGR	1.1%	0.5%	0.1%	-0.3%	-3.8%	0.4%			
<b>Removal Age (Y)</b>	0.94	0.97	0.99	1.01	1.18	0.98	0.2%		
AGR	5.1%	3.2%	2.0%	2.1%	16.4%	-16.8%			
<b>Average Installed Base Age (Y)</b>	4.93	5.06	5.13	5.15	4.89	4.92	-0.7%		
AGR	4.5%	2.7%	1.3%	0.3%	-5.0%	0.6%			
<b>Replacement Cycle Length (Y)</b>	6.51	6.13	5.88	5.69	4.82	5.55	-2.4%		
AGR	9.8%	-5.9%	-4.0%	-3.3%	-15.3%	15.2%			
<b>Units per Households (#)</b>	1.00	1.00	1.00	1.00	1.00	1.00			
AGR									
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend	
<b>Market Penetration (%)</b>	72.3%	72.0%	71.4%	70.6%	67.3%	67.0%	-5.3%		

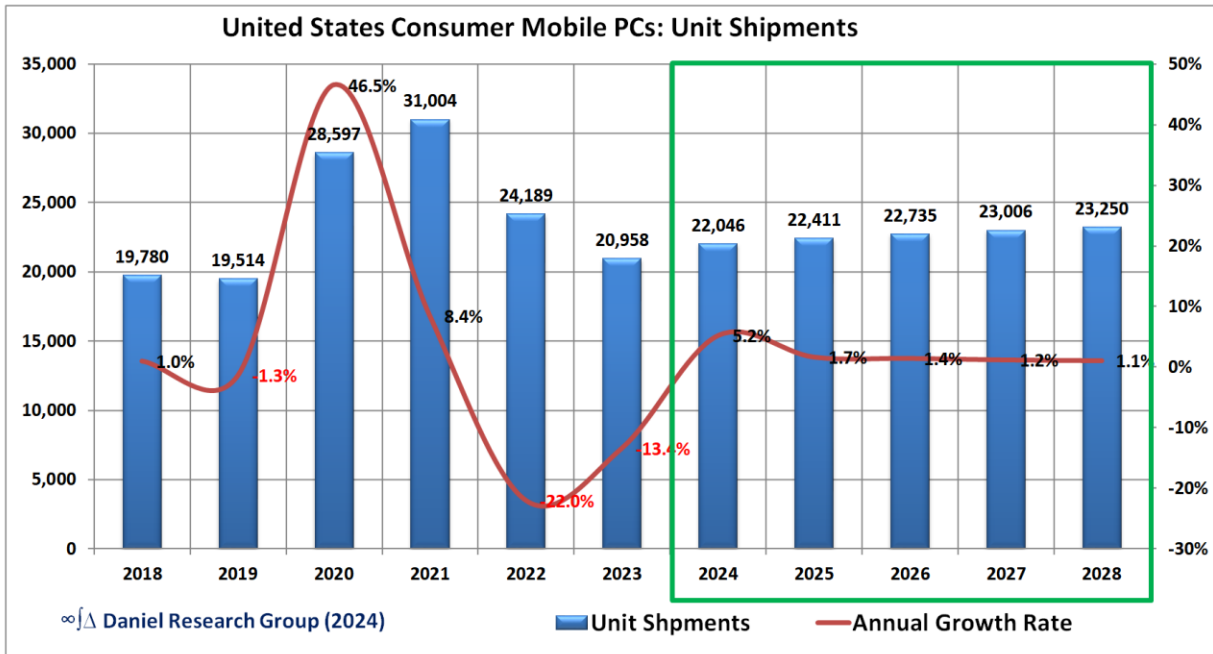
∞ ∫ Δ Daniel Research Group ©(2024)



# Consumer Total

United States Consumer Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	20,958	22,046	22,411	22,735	23,006	23,250	1.3%	
AGR	-13.4%	5.2%	1.7%	1.4%	1.2%	1.1%		
<b>Revenue (\$M)</b>	23,575	26,465	28,953	31,459	34,104	36,933	8.7%	
AGR	-15.0%	12.3%	9.4%	8.7%	8.4%	8.3%		
<b>Average Price (\$)</b>	1,125	1,200	1,292	1,384	1,482	1,588	7.3%	
AGR	-1.9%	6.7%	7.6%	7.1%	7.1%	7.2%		
<b>Installed Base (K)</b>	106,343	106,595	106,178	104,913	100,557	100,373	-1.5%	
AGR	1.0%	0.2%	-0.4%	-1.2%	-4.2%	-0.2%		
<b>Removal Age (Y)</b>	4.01	5.11	6.57	5.64	5.09	5.36	1.2%	
AGR	-27.9%	27.6%	28.6%	-14.1%	-9.8%	5.3%		
<b>Average Installed Base Age (Y)</b>	4.89	5.03	4.86	4.85	4.95	4.94	-0.5%	
AGR	8.8%	3.0%	-3.5%	-0.1%	2.0%	-0.2%		
<b>Replacement Cycle Length (Y)</b>	6.33	5.89	5.65	5.37	4.68	5.28	-2.7%	
AGR	13.7%	-6.9%	-4.1%	-5.0%	-13.0%	13.0%		
<b>Units per Households (#)</b>	1.05	1.05	1.05	1.04	1.04	1.04	-0.3%	
AGR	-0.1%	-0.1%	-0.3%	-0.4%	-0.2%	-0.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	76.2%	75.7%	74.9%	73.6%	70.1%	69.5%	-6.6%	

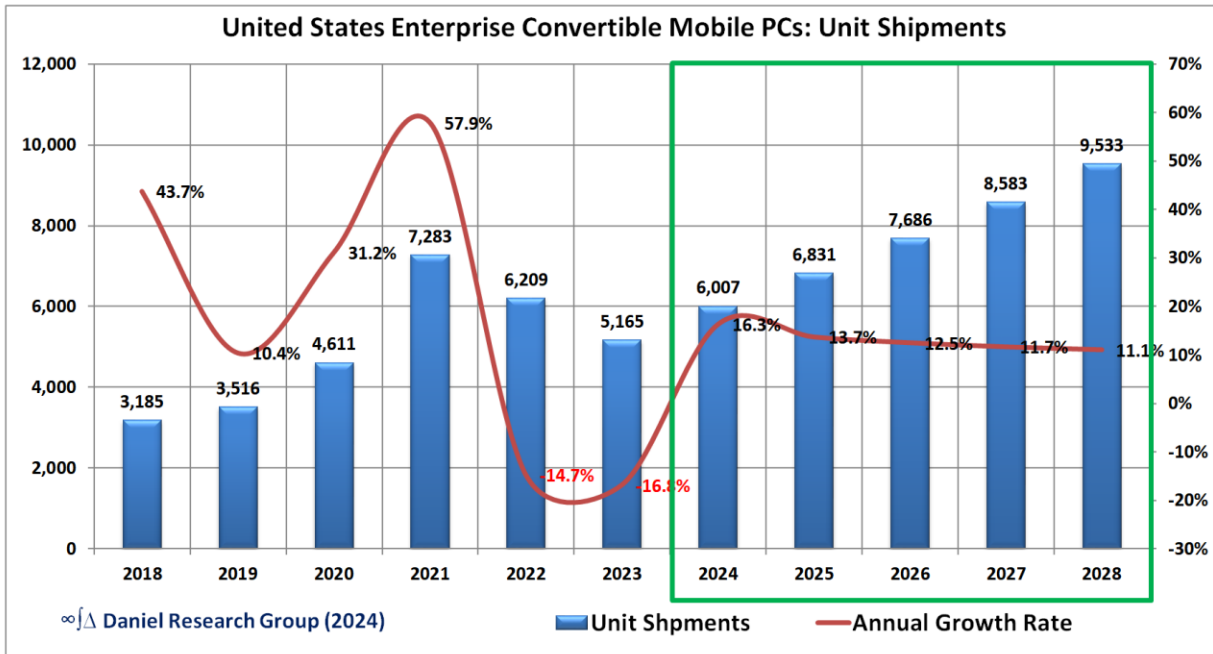
∞ ∫ Δ Daniel Research Group ©(2024)



# Enterprise Convertible

United States Enterprise Convertible Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	5,165	6,007	6,831	7,686	8,583	9,533	12.2%	
AGR	-16.8%	16.3%	13.7%	12.5%	11.7%	11.1%		
<b>Revenue (\$M)</b>	3,081	3,506	3,901	4,296	4,694	5,102	9.8%	
AGR	-27.4%	13.8%	11.3%	10.1%	9.3%	8.7%		
<b>Average Price (\$)</b>	596	584	571	559	547	535	-2.1%	
AGR	-12.7%	-2.1%	-2.1%	-2.1%	-2.1%	-2.1%		
<b>Installed Base (K)</b>	14,390	15,506	16,837	17,812	19,421	21,006	7.9%	
AGR	10.9%	7.8%	8.6%	5.8%	9.0%	8.2%		
<b>Removal Age (Y)</b>	2.40	2.86	2.99	3.50	3.21	3.40	4.3%	
AGR	18.4%	19.1%	4.3%	17.3%	-8.5%	6.0%		
<b>Average Installed Base Age (Y)</b>	2.96	3.16	3.26	3.14	3.08	2.94	-1.7%	
AGR	14.8%	6.7%	3.2%	-3.7%	-1.6%	-4.5%		
<b>Replacement Cycle Length (Y)</b>	4.84	4.17	4.06	3.65	3.78	3.64	-3.3%	
AGR	12.0%	-13.9%	-2.6%	-10.0%	3.6%	-3.8%		
<b>Units per Businesses (#)</b>	3.46	3.10	2.97	2.89	2.99	3.13	0.3%	
AGR	-13.4%	-10.4%	-4.2%	-2.7%	3.5%	4.8%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	61.5%	72.5%	81.3%	87.8%	92.2%	95.1%	33.7%	

∞ ∫ Δ Daniel Research Group ©(2024)

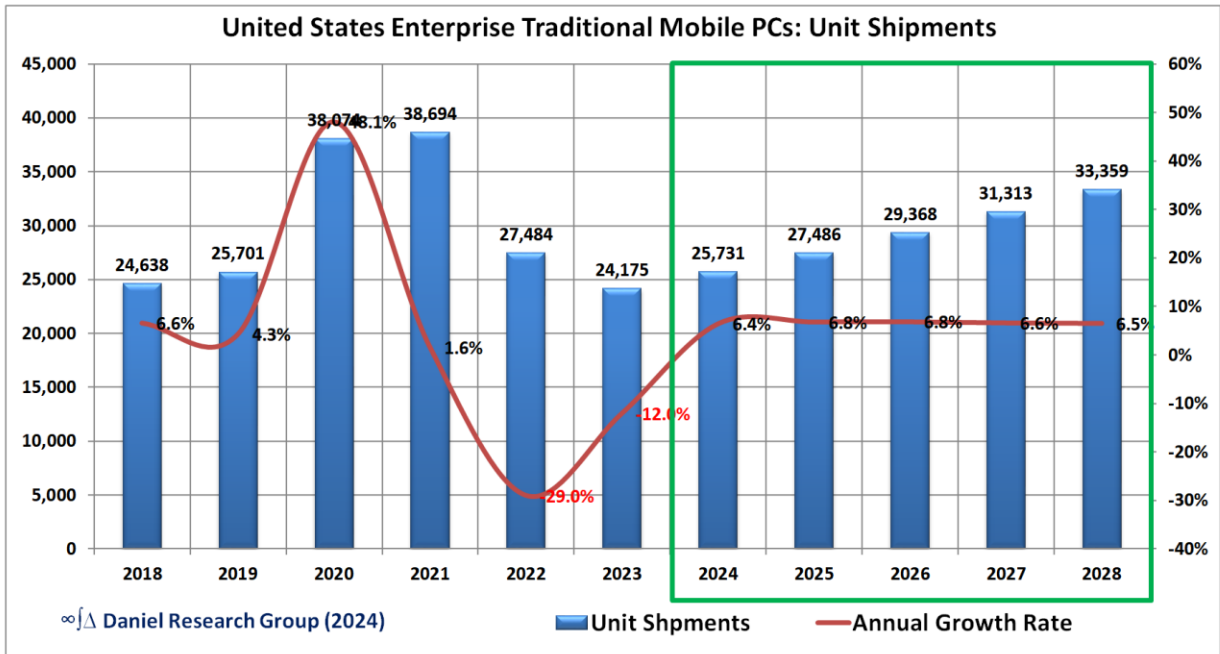




# Enterprise Traditional

United States Enterprise Traditional Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	24,175	25,731	27,486	29,368	31,313	33,359	6.7%	
AGR	-12.0%	6.4%	6.8%	6.8%	6.6%	6.5%		
<b>Revenue (\$M)</b>	16,440	17,680	19,082	20,600	22,193	23,888	7.8%	
AGR	-18.2%	7.5%	7.9%	8.0%	7.7%	7.6%		
<b>Average Price (\$)</b>	680	687	694	701	709	716	1.0%	
AGR	-7.0%	1.0%	1.0%	1.0%	1.0%	1.0%		
<b>Installed Base (K)</b>	61,355	73,419	85,231	96,779	108,051	119,058	12.8%	
AGR	24.4%	19.7%	16.1%	13.6%	11.6%	10.2%		
<b>Removal Age (Y)</b>	1.66	1.95	2.25	2.54	2.82	3.09	12.1%	
AGR	-7.9%	17.7%	15.0%	13.0%	11.1%	9.5%		
<b>Average Installed Base Age (Y)</b>	2.55	2.95	3.31	3.64	3.92	4.16	9.0%	
AGR	22.0%	15.8%	12.2%	9.7%	7.8%	6.3%		
<b>Replacement Cycle Length (Y)</b>	6.06	6.37	6.44	6.43	6.39	6.33	-0.2%	
AGR	82.0%	5.2%	1.0%	-0.1%	-0.6%	-1.0%		
<b>Units per Businesses (#)</b>	11.56	13.37	15.16	16.88	18.57	20.22	10.9%	
AGR	19.7%	15.7%	13.4%	11.3%	10.0%	8.9%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	78.5%	79.6%	80.7%	81.7%	82.6%	83.6%	5.0%	

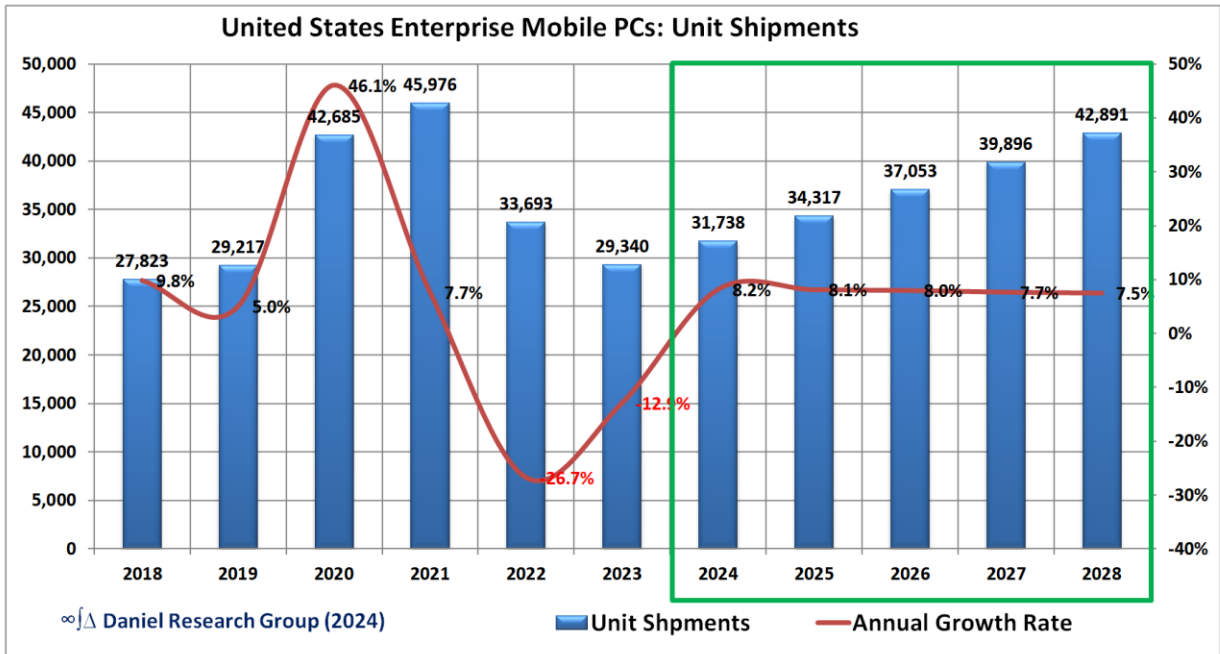
∞ ∫ Δ Daniel Research Group ©(2024)



# Enterprise Total

United States Enterprise Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	29,340	31,738	34,317	37,053	39,896	42,891	7.8%	
AGR	-12.9%	8.2%	8.1%	8.0%	7.7%	7.5%		
<b>Revenue (\$M)</b>	19,521	21,186	22,983	24,896	26,887	28,991	8.2%	
AGR	-19.8%	8.5%	8.5%	8.3%	8.0%	7.8%		
<b>Average Price (\$)</b>	665	668	670	672	674	676	0.3%	
AGR	-7.9%	0.3%	0.3%	0.3%	0.3%	0.3%		
<b>Installed Base (K)</b>	75,744	88,925	102,068	114,591	127,472	140,064	12.0%	
AGR	21.6%	17.4%	14.8%	12.3%	11.2%	9.9%		
<b>Removal Age (Y)</b>	1.80	2.07	2.34	2.60	2.85	3.07	10.3%	
AGR	-7.4%	15.3%	13.1%	10.7%	9.7%	7.7%		
<b>Average Installed Base Age (Y)</b>	2.69	3.07	3.40	3.68	3.92	4.12	7.6%	
AGR	19.0%	14.0%	10.6%	8.5%	6.4%	5.1%		
<b>Replacement Cycle Length (Y)</b>	5.77	5.79	5.82	5.67	5.72	5.62	-0.7%	
AGR	65.6%	0.4%	0.5%	-2.6%	0.8%	-1.7%		
<b>Units per Businesses (#)</b>	11.60	13.26	14.98	16.61	18.36	20.10	11.0%	
AGR	17.7%	14.3%	13.0%	10.9%	10.5%	9.5%		
	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>Change '20-'25</b>	<b>Trend</b>
<b>Market Penetration (%)</b>	96.6%	97.2%	97.8%	98.2%	98.6%	98.9%	2.3%	

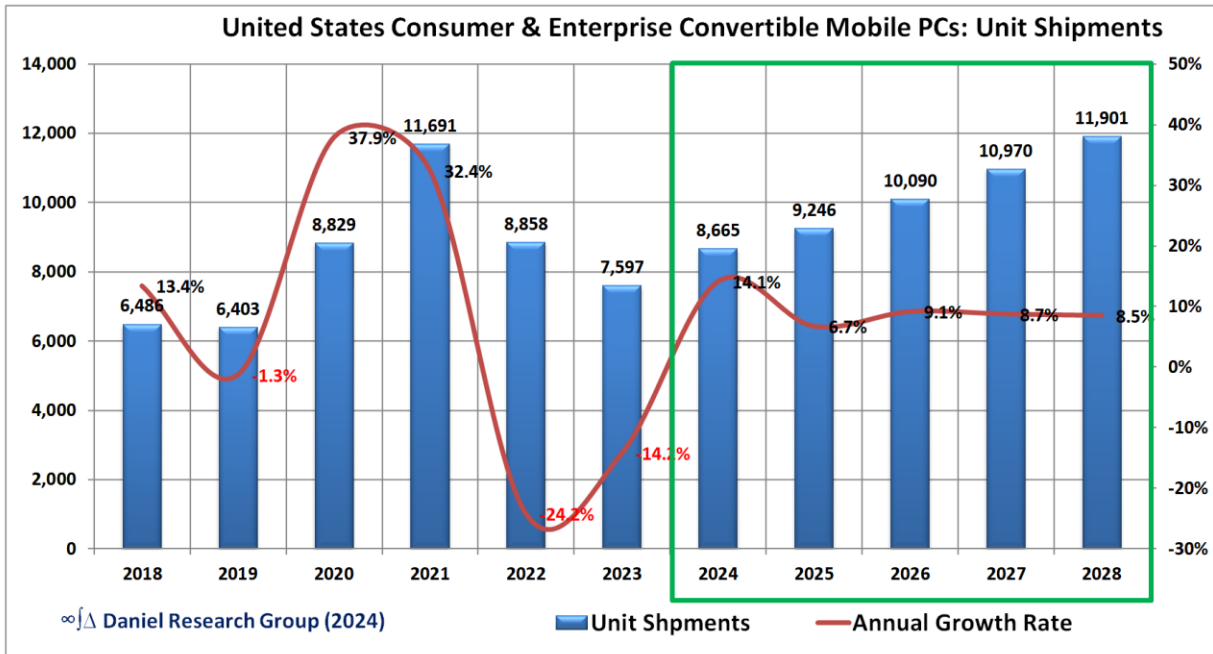
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Convertible Mobile PCs

United States Consumer & Enterprise Convertible Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	7,597	8,665	9,246	10,090	10,970	11,901	8.3%	
AGR	-14.2%	14.1%	6.7%	9.1%	8.7%	8.5%		
<b>Revenue (\$M)</b>	4,779	5,395	5,646	6,060	6,473	6,891	6.3%	
AGR	-24.6%	12.9%	4.7%	7.3%	6.8%	6.5%		
<b>Average Price (\$)</b>	629	623	611	601	590	579	-1.8%	
AGR	-12.1%	-1.0%	-1.9%	-1.7%	-1.8%	-1.9%		
<b>Installed Base (K)</b>	24,556	25,400	26,171	26,153	27,109	28,117	2.6%	
AGR	5.9%	3.4%	3.0%	-0.1%	3.7%	3.7%		
<b>Removal Age (Y)</b>	2.79	3.47	3.60	4.08	3.60	3.69	1.5%	
AGR	-19.2%	24.3%	3.7%	13.5%	-12.0%	2.5%		
<b>Average Installed Base Age (Y)</b>	3.30	3.43	3.49	3.30	3.22	3.06	-2.8%	
AGR	13.2%	3.9%	1.7%	-5.4%	-2.3%	-4.8%		
<b>Replacement Cycle Length (Y)</b>	4.94	4.25	4.09	3.59	3.71	3.58	-4.2%	
AGR	22.7%	-14.0%	-3.8%	-12.2%	3.3%	-3.4%		
<b>Units per Households &amp; Businesses (#)</b>	1.71	1.71	1.74	1.80	1.91	2.04	4.5%	
AGR	-0.5%	-0.5%	2.3%	3.3%	6.0%	6.5%		
<b>Market Penetration (%)</b>	10.3%	10.5%	10.5%	10.1%	9.8%	9.4%	-0.8%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

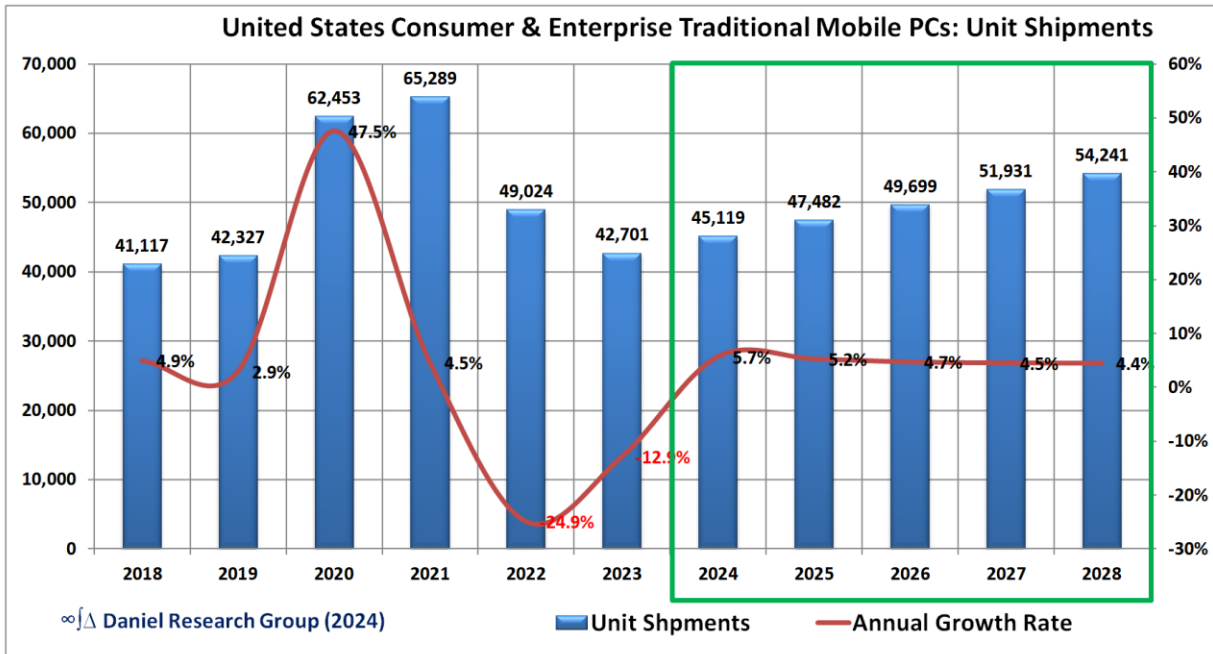
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Traditional Mobile PCs

United States Consumer & Enterprise Traditional Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	42,701	45,119	47,482	49,699	51,931	54,241	4.7%	
AGR	-12.9%	5.7%	5.2%	4.7%	4.5%	4.4%		
<b>Revenue (\$M)</b>	38,317	42,256	46,290	50,295	54,519	59,032	8.7%	
AGR	-16.2%	10.3%	9.5%	8.7%	8.4%	8.3%		
<b>Average Price (\$)</b>	897	937	975	1,012	1,050	1,088	3.8%	
AGR	-3.8%	4.4%	4.1%	3.8%	3.7%	3.7%		
<b>Installed Base (K)</b>	157,532	170,120	182,075	193,351	200,920	212,320	5.7%	
AGR	9.1%	8.0%	7.0%	6.2%	3.9%	5.7%		
<b>Removal Age (Y)</b>	2.97	3.24	3.49	4.74	4.60	4.70	9.8%	
AGR	-42.9%	9.2%	7.6%	35.9%	-2.9%	2.2%		
<b>Average Installed Base Age (Y)</b>	4.05	4.32	4.55	4.54	4.58	4.58	1.5%	
AGR	8.6%	6.7%	5.3%	-0.2%	0.7%	0.1%		
<b>Replacement Cycle Length (Y)</b>	6.32	6.23	6.12	6.03	5.53	5.96	-1.1%	
AGR	38.4%	-1.5%	-1.7%	-1.5%	-8.3%	7.7%		
<b>Units per Households &amp; Businesses (#)</b>	1.55	1.66	1.78	1.89	2.04	2.14	6.5%	
AGR	7.7%	7.2%	6.7%	6.4%	7.7%	5.2%		
<b>Market Penetration (%)</b>	72.6%	72.4%	71.9%	71.1%	68.0%	67.8%	-4.8%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

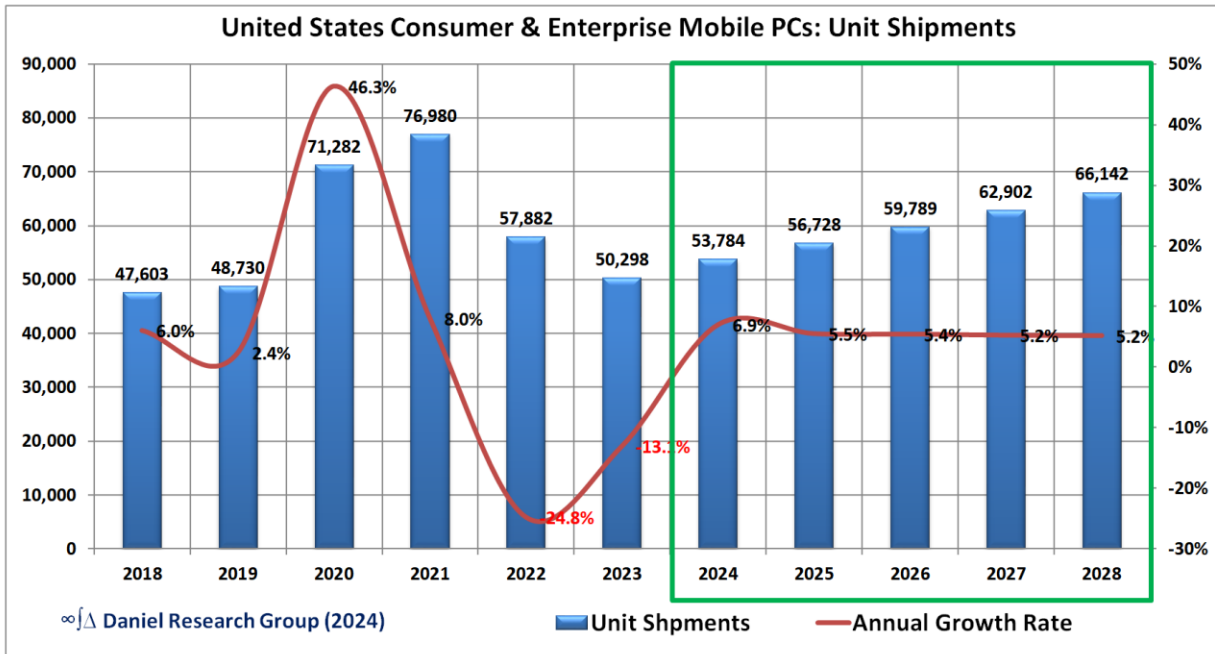
∞∫Δ Daniel Research Group ©(2024)



# Total Mobile PC

United States Consumer & Enterprise Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	50,298	53,784	56,728	59,789	62,902	66,142	5.3%	
AGR	-13.1%	6.9%	5.5%	5.4%	5.2%	5.2%		
<b>Revenue (\$M)</b>	43,096	47,651	51,936	56,355	60,991	65,923	8.5%	
AGR	-17.3%	10.6%	9.0%	8.5%	8.2%	8.1%		
<b>Average Price (\$)</b>	857	886	916	943	970	997	3.0%	
AGR	-4.8%	3.4%	3.3%	3.0%	2.9%	2.8%		
<b>Installed Base (K)</b>	182,087	195,520	208,246	219,504	228,029	240,437	5.3%	
AGR	8.6%	7.4%	6.5%	5.4%	3.9%	5.4%		
<b>Removal Age (Y)</b>	3.00	3.24	4.47	4.47	4.36	4.42	8.1%	
AGR	-39.3%	8.0%	38.1%	-0.1%	-2.4%	1.2%		
<b>Average Installed Base Age (Y)</b>	4.01	4.27	4.28	4.29	4.33	4.34	0.4%	
AGR	8.5%	6.5%	0.1%	0.3%	0.9%	0.3%		
<b>Replacement Cycle Length (Y)</b>	6.08	5.85	5.73	5.52	5.19	5.47	-1.6%	
AGR	35.7%	-3.9%	-1.9%	-3.7%	-6.0%	5.4%		
<b>Units per Households &amp; Businesses (#)</b>	1.69	1.80	1.92	2.04	2.20	2.32	6.4%	
AGR	7.4%	6.8%	6.5%	6.1%	7.9%	5.3%		
<b>Market Penetration (%)</b>	77.1%	76.7%	76.0%	74.8%	71.5%	71.0%	-6.2%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

∞ ∫ Δ Daniel Research Group ©(2024)

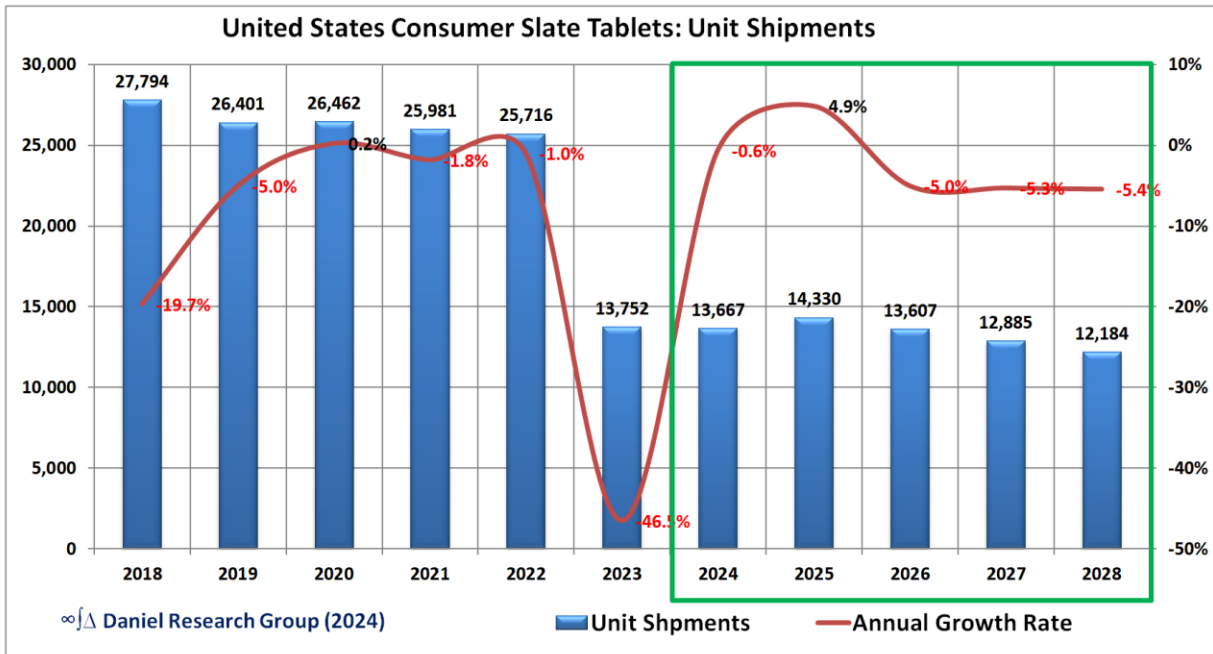


# Tablets

## Consumer Slate

United States Consumer Slate Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	13,752	13,667	14,330	13,607	12,885	12,184	-2.8%	
AGR	-46.5%	-0.6%	4.9%	-5.0%	-5.3%	-5.4%		
<b>Revenue (\$M)</b>	2,911	3,128	3,559	3,679	3,801	3,930	5.9%	
AGR	-36.7%	7.5%	13.8%	3.4%	3.3%	3.4%		
<b>Average Price (\$)</b>	212	229	248	270	295	323	9.0%	
AGR	18.4%	8.1%	8.5%	8.8%	9.1%	9.3%		
<b>Installed Base (K)</b>	145,831	136,976	128,001	117,142	105,834	91,143	-9.7%	
AGR	-6.1%	-6.1%	-6.6%	-8.5%	-9.7%	-13.9%		
<b>Removal Age (Y)</b>	6.40	7.03	7.53	8.38	8.77	9.78	8.6%	
AGR	19.7%	10.0%	7.0%	11.3%	4.6%	11.5%		
<b>Average Installed Base Age (Y)</b>	6.45	6.87	7.16	7.29	7.29	6.88	0.0%	
AGR	8.9%	6.6%	4.3%	1.7%	0.0%	-5.7%		
<b>Replacement Cycle Length (Y)</b>	7.26	7.08	6.49	5.79	5.37	4.39	-11.3%	
AGR	12.4%	-2.4%	-8.3%	-10.9%	-7.1%	-18.3%		
<b>Units per Households (#)</b>	1.84	1.71	1.58	1.44	1.29	1.10	-10.4%	
AGR	-7.3%	-7.0%	-7.3%	-9.3%	-10.4%	-14.6%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	59.7%	59.7%	59.6%	59.6%	59.6%	59.5%	-0.2%	

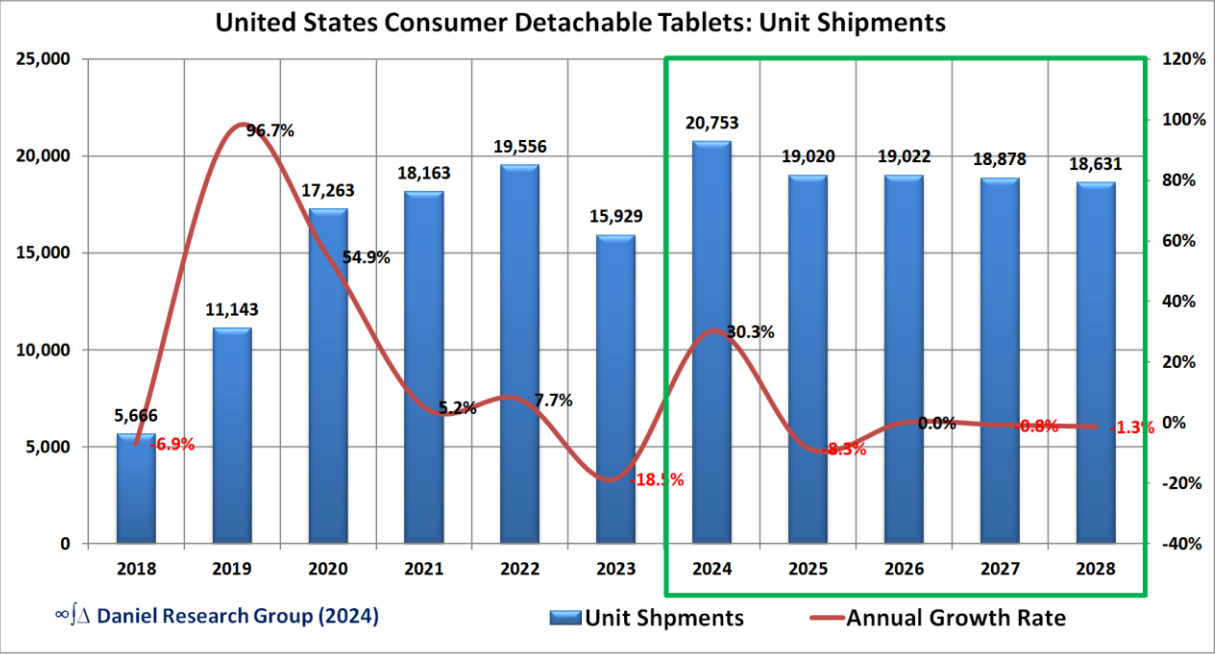
∞ ∫ Δ Daniel Research Group ©(2024)



# Consumer Detachable

United States Consumer Detachable Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	15,929	20,753	19,020	19,022	18,878	18,631	-2.7%	
AGR	-18.5%	30.3%	-8.3%	0.0%	-0.8%	-1.3%		
Revenue (\$M)	10,781	13,971	12,737	12,671	12,509	12,280	-3.2%	
AGR	-20.3%	29.6%	-8.8%	-0.5%	-1.3%	-1.8%		
Average Price (\$)	677	673	670	666	663	659	-0.5%	
AGR	-2.2%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%		
Installed Base (K)	56,877	63,577	68,589	72,972	76,525	79,690	5.8%	
AGR	11.0%	11.8%	7.9%	6.4%	4.9%	4.1%		
Removal Age (Y)	2.76	2.78	3.18	3.53	4.02	4.14	10.5%	
AGR	35.0%	0.9%	14.2%	11.3%	13.6%	3.2%		
Average Installed Base Age (Y)	3.67	3.89	4.16	4.40	4.60	4.80	5.4%	
AGR	10.6%	6.0%	7.0%	5.8%	4.4%	4.5%		
Replacement Cycle Length (Y)	6.54	5.52	5.90	5.98	5.99	6.15	2.7%	
AGR	2.2%	-15.5%	6.7%	1.5%	0.1%	2.7%		
Units per Households (#)	2.29	2.32	2.28	2.21	2.12	2.02	-3.4%	
AGR	0.2%	1.4%	-1.8%	-3.0%	-4.2%	-4.6%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
Market Penetration (%)	18.7%	20.4%	22.2%	24.2%	26.2%	28.3%	9.6%	

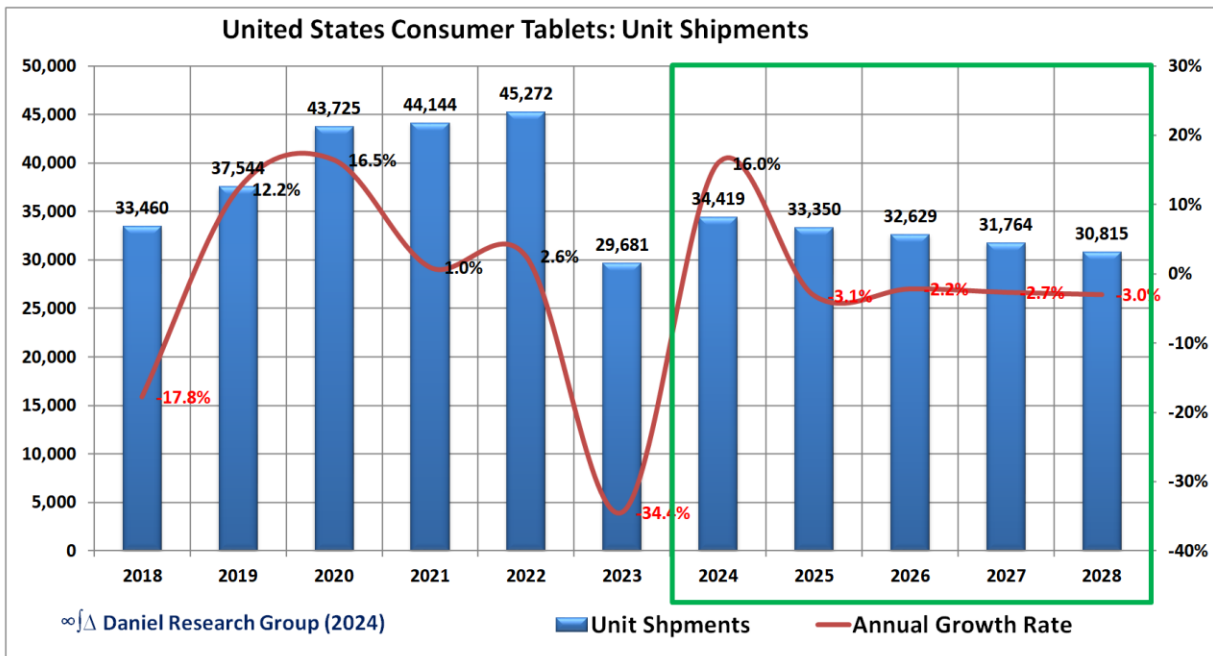
∞ ∫ Δ Daniel Research Group ©(2024)



# Consumer Total

United States Consumer Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	29,681	34,419	33,350	32,629	31,764	30,815	-2.7%	
AGR	-34.4%	16.0%	-3.1%	-2.2%	-2.7%	-3.0%		
<b>Revenue (\$M)</b>	13,691	17,099	16,296	16,350	16,310	16,210	-1.3%	
AGR	-24.5%	24.9%	-4.7%	0.3%	-0.2%	-0.6%		
<b>Average Price (\$)</b>	461	497	489	501	513	526	1.4%	
AGR	15.2%	7.7%	-1.6%	2.5%	2.5%	2.4%		
<b>Installed Base (K)</b>	202,708	200,553	196,589	190,114	182,359	170,832	-3.9%	
AGR	-1.9%	-1.1%	-2.0%	-3.3%	-4.1%	-6.3%		
<b>Removal Age (Y)</b>	5.30	5.52	5.97	6.61	6.94	6.71	5.0%	
AGR	22.7%	4.3%	8.1%	10.8%	5.0%	-3.4%		
<b>Average Installed Base Age (Y)</b>	5.71	5.94	6.12	6.17	6.15	6.15	0.9%	
AGR	7.3%	4.1%	3.0%	0.9%	-0.4%	0.0%		
<b>Replacement Cycle Length (Y)</b>	7.04	6.48	6.27	5.86	5.61	5.03	-6.1%	
AGR	9.2%	-7.9%	-3.3%	-6.5%	-4.2%	-10.3%		
<b>Units per Households (#)</b>	2.21	2.14	2.05	1.94	1.82	1.67	-6.0%	
AGR	-4.2%	-3.2%	-4.0%	-5.4%	-6.2%	-8.4%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	69.1%	69.9%	70.8%	71.7%	72.7%	73.7%	4.6%	

∞ ∫ Δ Daniel Research Group ©(2024)

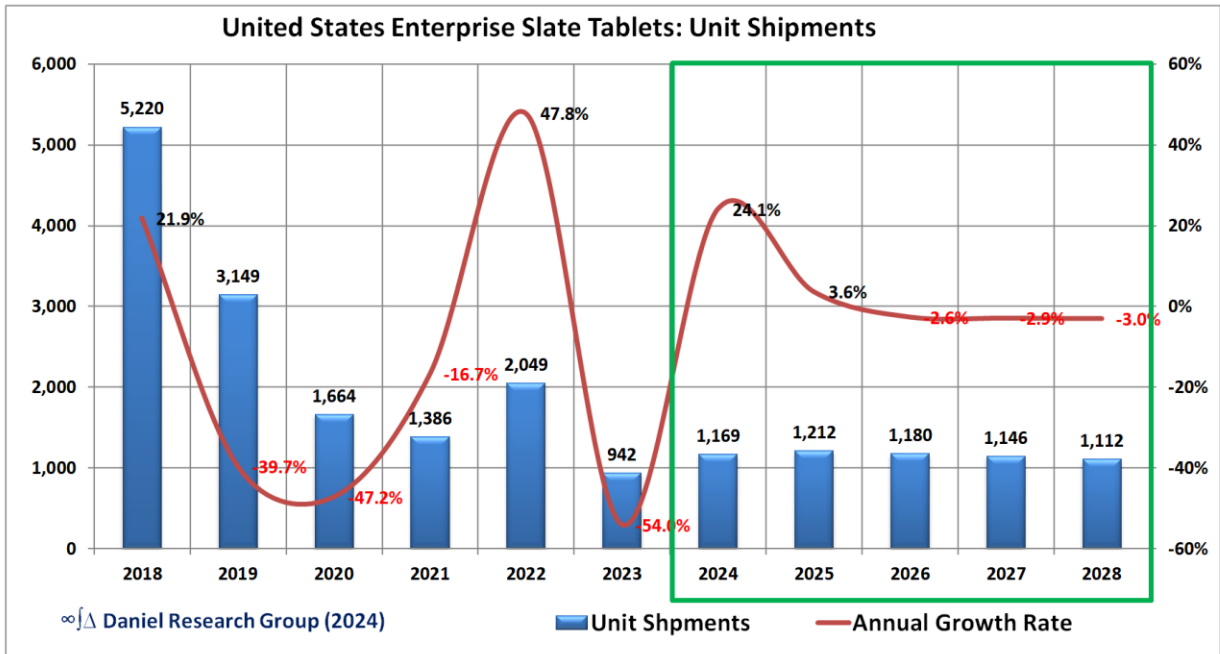




# Enterprise Slate

United States Enterprise Slate Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	942	1,169	1,212	1,180	1,146	1,112	-1.3%	
AGR	-54.0%	24.1%	3.6%	-2.6%	-2.9%	-3.0%		
<b>Revenue (\$M)</b>	300	366	373	358	341	326	-2.9%	
AGR	-63.6%	22.1%	1.9%	-4.2%	-4.5%	-4.6%		
<b>Average Price (\$)</b>	319	313	308	303	298	293	-1.7%	
AGR	-20.8%	-1.7%	-1.7%	-1.7%	-1.7%	-1.7%		
<b>Installed Base (K)</b>	16,314	15,177	14,082	12,973	11,806	10,551	-8.7%	
AGR	-7.2%	-7.0%	-7.2%	-7.9%	-9.0%	-10.6%		
<b>Removal Age (Y)</b>	7.06	7.47	7.96	8.56	9.34	10.13	7.9%	
AGR	25.0%	5.8%	6.7%	7.6%	9.0%	8.5%		
<b>Average Installed Base Age (Y)</b>	7.13	7.68	8.14	8.50	8.70	8.69	3.1%	
AGR	10.6%	7.7%	5.9%	4.4%	2.4%	-0.2%		
<b>Replacement Cycle Length (Y)</b>	8.39	7.58	7.10	6.67	6.10	5.46	-7.9%	
AGR	4.6%	-9.6%	-6.3%	-6.1%	-8.5%	-10.6%		
<b>Units per Businesses (#)</b>	8.90	7.40	6.23	5.23	4.38	3.62	-16.4%	
AGR	-17.6%	-16.8%	-15.9%	-16.0%	-16.3%	-17.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	27.1%	29.7%	32.4%	35.3%	38.3%	41.3%	14.2%	

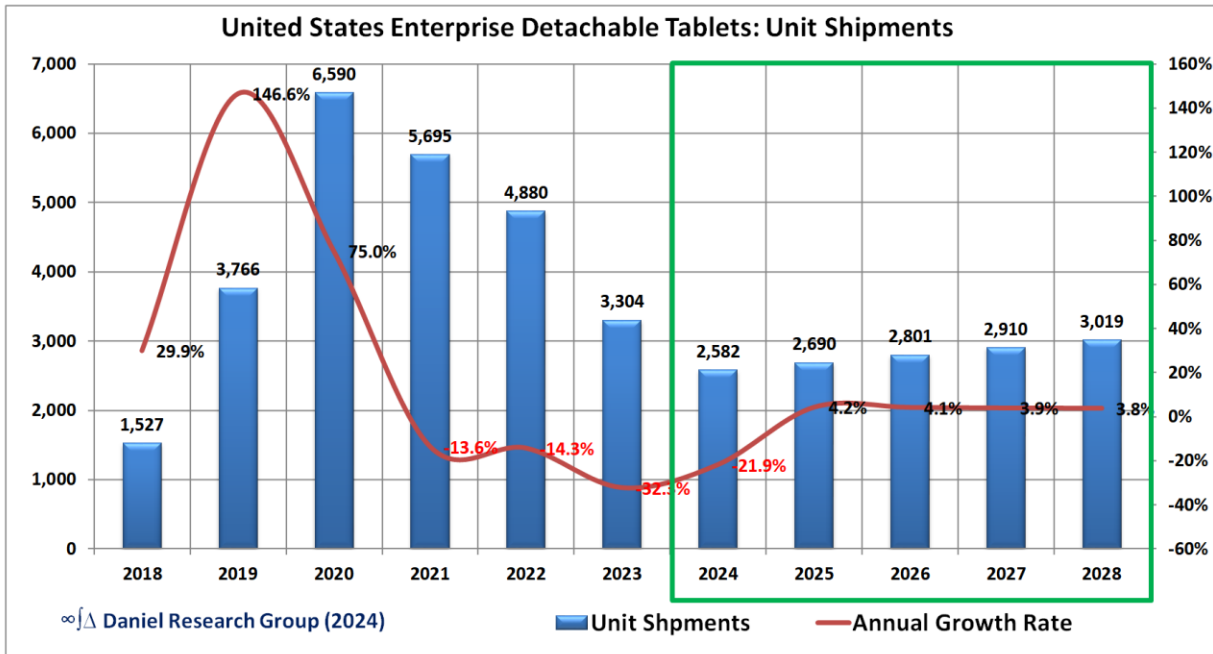
∞ ∫ Δ Daniel Research Group ©(2024)



# Enterprise Detachable

United States Enterprise Detachable Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	3,304	2,582	2,690	2,801	2,910	3,019	4.0%	
AGR	-32.3%	-21.9%	4.2%	4.1%	3.9%	3.8%		
<b>Revenue (\$M)</b>	2,381	1,826	1,868	1,909	1,947	1,983	2.1%	
AGR	-25.4%	-23.3%	2.3%	2.2%	2.0%	1.9%		
<b>Average Price (\$)</b>	721	707	694	682	669	657	-1.8%	
AGR	10.2%	-1.8%	-1.8%	-1.8%	-1.8%	-1.8%		
<b>Installed Base (K)</b>	3,705	5,573	7,208	8,606	9,783	10,752	17.9%	
AGR	89.8%	50.4%	29.3%	19.4%	13.7%	9.9%		
<b>Removal Age (Y)</b>	1.11	1.33	1.54	1.79	2.05	2.31	14.8%	
AGR	-32.0%	20.2%	16.0%	15.7%	14.5%	12.9%		
<b>Average Installed Base Age (Y)</b>	1.69	2.08	2.53	2.99	3.45	3.88	16.9%	
AGR	21.0%	23.1%	21.5%	18.2%	15.2%	12.8%		
<b>Replacement Cycle Length (Y)</b>	3.39	8.81	7.83	7.14	6.64	6.25	-8.2%	
AGR	152.1%	160.0%	-11.2%	-8.8%	-6.9%	-6.0%		
<b>Units per Businesses (#)</b>	4.63	5.35	5.42	5.14	4.73	4.30	-5.3%	
AGR	43.9%	15.5%	1.3%	-5.1%	-7.9%	-9.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	11.8%	15.1%	19.1%	23.8%	29.3%	35.5%	23.7%	

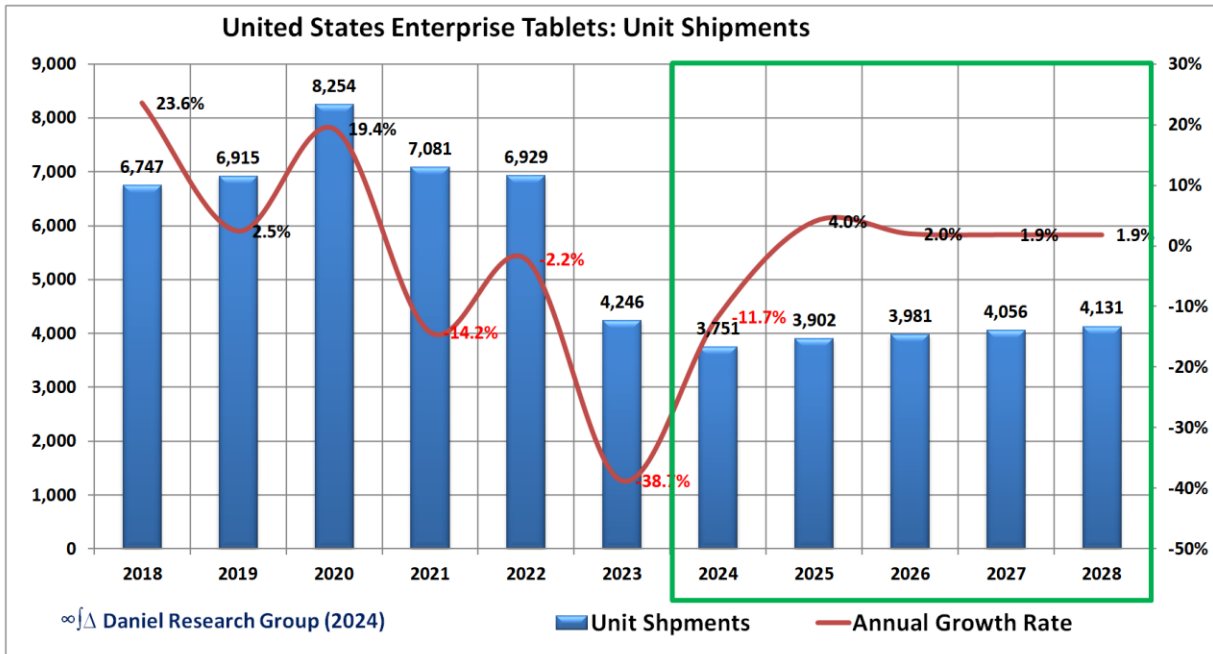
∞∫Δ Daniel Research Group ©(2024)



# Enterprise Total

United States Enterprise Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	4,246	3,751	3,902	3,981	4,056	4,131	2.4%	
AGR	-38.7%	-11.7%	4.0%	2.0%	1.9%	1.9%		
<b>Revenue (\$M)</b>	2,681	2,193	2,241	2,267	2,288	2,309	1.3%	
AGR	-33.2%	-18.2%	2.2%	1.1%	0.9%	0.9%		
<b>Average Price (\$)</b>	631	585	574	569	564	559	-1.1%	
AGR	9.0%	-7.4%	-1.7%	-0.9%	-0.9%	-0.9%		
<b>Installed Base (K)</b>	20,018	20,750	21,289	21,580	21,589	21,303	0.7%	
AGR	2.5%	3.7%	2.6%	1.4%	0.0%	-1.3%		
<b>Removal Age (Y)</b>	4.16	4.79	4.96	5.19	6.49	6.56	8.2%	
AGR	24.9%	15.1%	3.6%	4.7%	25.0%	1.1%		
<b>Average Installed Base Age (Y)</b>	5.62	5.87	6.10	6.30	6.27	6.20	1.4%	
AGR	5.2%	4.5%	3.9%	3.3%	-0.5%	-1.1%		
<b>Replacement Cycle Length (Y)</b>	6.33	7.87	7.33	6.85	6.34	5.82	-7.3%	
AGR	86.6%	24.5%	-6.9%	-6.6%	-7.5%	-8.1%		
<b>Units per Businesses (#)</b>	8.96	8.29	7.70	7.12	6.56	6.00	-7.7%	
AGR	-9.4%	-7.5%	-7.1%	-7.5%	-7.9%	-8.4%		
	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>Change '20-'25</b>	<b>Trend</b>
<b>Market Penetration (%)</b>	33.0%	36.3%	39.7%	43.2%	46.7%	50.3%	17.3%	

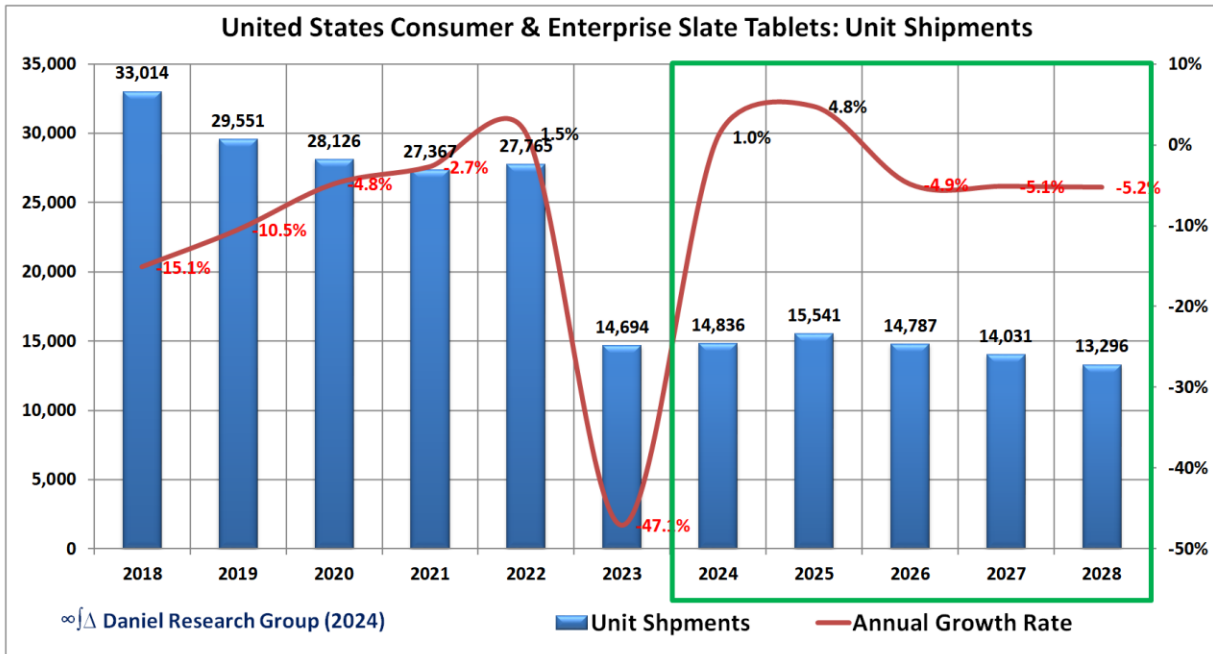
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Slate

United States Consumer & Enterprise Slate Tablets									
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend	
<b>Unit Shipments (K)</b>	14,694	14,836	15,541	14,787	14,031	13,296	-2.7%		
AGR	-47.1%	1.0%	4.8%	-4.9%	-5.1%	-5.2%			
<b>Revenue (\$M)</b>	3,211	3,494	3,933	4,036	4,143	4,256	5.1%		
AGR	-40.8%	8.8%	12.5%	2.6%	2.6%	2.7%			
<b>Average Price (\$)</b>	219	236	253	273	295	320	8.0%		
AGR	11.9%	7.8%	7.4%	7.9%	8.2%	8.4%			
<b>Installed Base (K)</b>	162,145	152,153	142,082	130,115	117,640	101,694	-9.6%		
AGR	-6.3%	-6.2%	-6.6%	-8.4%	-9.6%	-13.6%			
<b>Removal Age (Y)</b>	6.46	7.08	7.59	8.47	8.91	8.60	5.0%		
AGR	20.4%	9.7%	7.2%	11.5%	5.3%	-3.5%			
<b>Average Installed Base Age (Y)</b>	6.52	6.95	7.26	7.39	7.39	7.36	1.4%		
AGR	9.0%	6.7%	4.4%	1.8%	0.0%	-0.4%			
<b>Replacement Cycle Length (Y)</b>	7.35	7.13	6.55	5.86	5.44	4.48	-11.0%		
AGR	11.7%	-3.1%	-8.1%	-10.4%	-7.3%	-17.7%			
<b>Units per Households &amp; Businesses (#)</b>	2.00	1.85	1.71	1.55	1.39	1.19	-10.5%		
AGR	-7.6%	-7.3%	-7.6%	-9.4%	-10.5%	-14.4%			
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend	
<b>Market Penetration (%)</b>	58.2%	58.2%	58.3%	58.4%	58.5%	58.6%	0.5%		

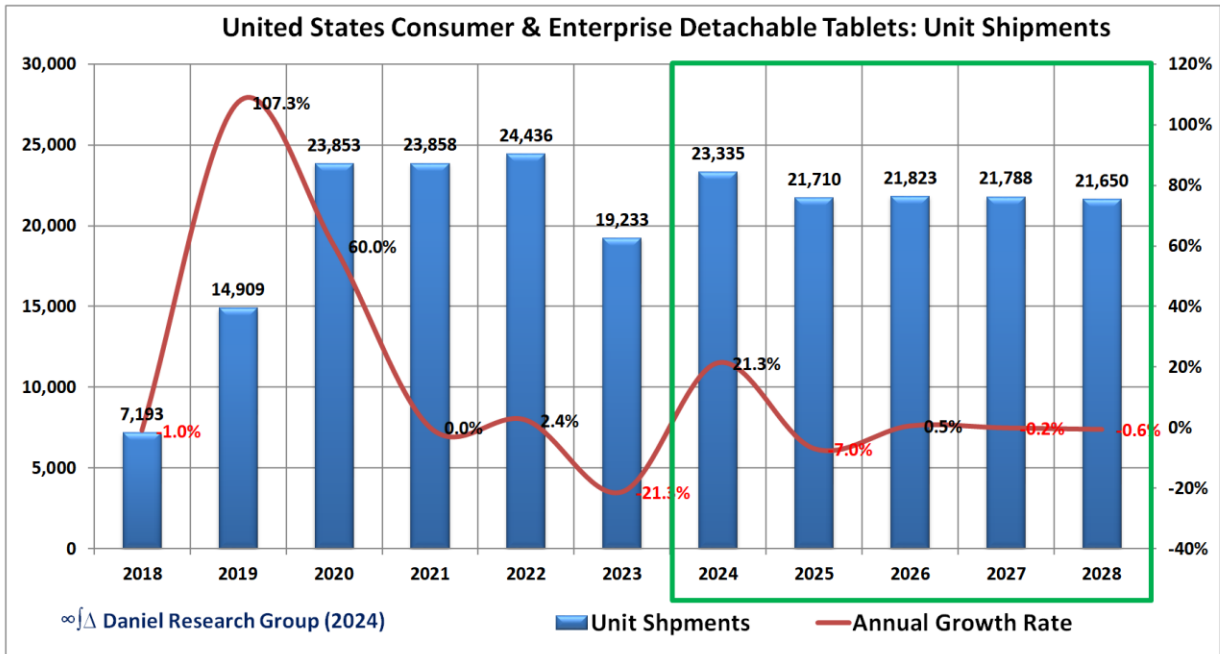
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Detachable

United States Consumer & Enterprise Detachable Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	19,233	23,335	21,710	21,823	21,788	21,650	-1.9%	
AGR	-21.3%	21.3%	-7.0%	0.5%	-0.2%	-0.6%		
<b>Revenue (\$M)</b>	13,162	15,797	14,605	14,580	14,456	14,263	-2.5%	
AGR	-21.3%	20.0%	-7.5%	-0.2%	-0.9%	-1.3%		
<b>Average Price (\$)</b>	684	677	673	668	663	659	-0.7%	
AGR	0.0%	-1.1%	-0.6%	-0.7%	-0.7%	-0.7%		
<b>Installed Base (K)</b>	60,582	69,150	75,797	81,578	86,308	90,442	6.9%	
AGR	13.9%	14.1%	9.6%	7.6%	5.8%	4.8%		
<b>Removal Age (Y)</b>	2.56	2.65	3.01	3.35	3.79	3.93	10.3%	
AGR	35.2%	3.9%	13.5%	11.0%	13.1%	3.8%		
<b>Average Installed Base Age (Y)</b>	3.62	3.82	4.09	4.34	4.55	4.77	5.7%	
AGR	8.7%	5.5%	6.9%	6.1%	4.9%	4.9%		
<b>Replacement Cycle Length (Y)</b>	6.12	5.68	6.03	6.09	6.06	6.16	2.0%	
AGR	35.8%	-7.2%	6.1%	0.9%	-0.4%	1.7%		
<b>Units per Households &amp; Businesses (#)</b>	2.36	2.43	2.41	2.35	2.26	2.16	-3.0%	
AGR	2.3%	3.0%	-0.9%	-2.5%	-3.9%	-4.6%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	18.4%	20.1%	22.1%	24.1%	26.4%	28.7%	10.3%	

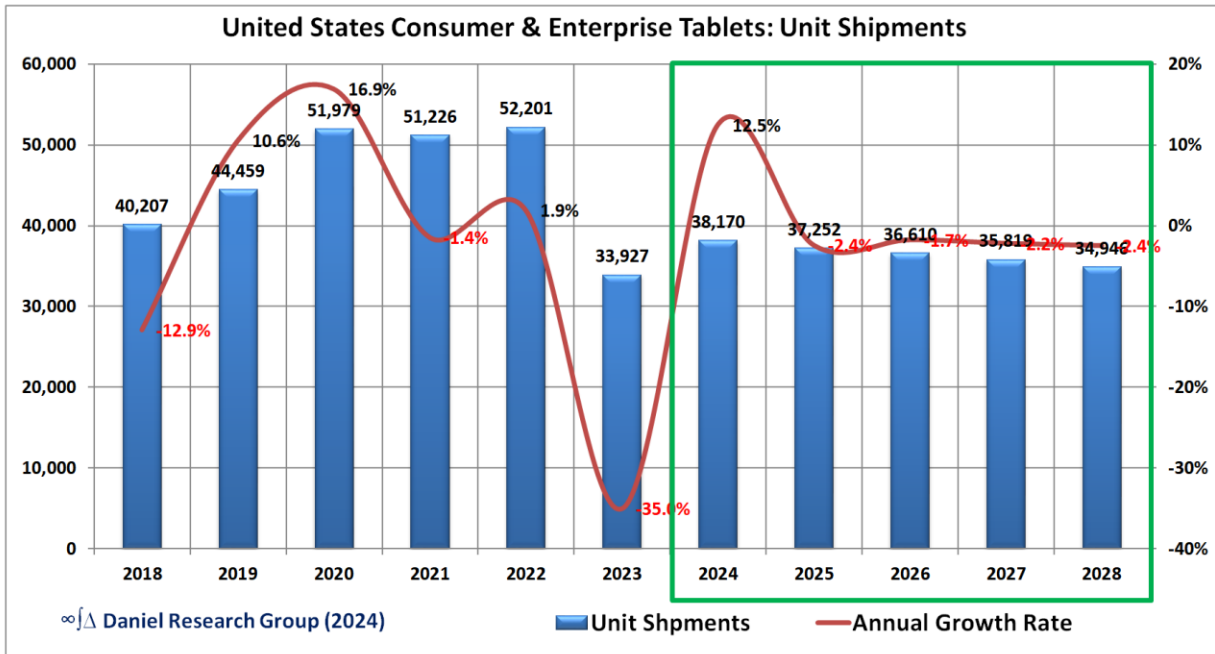
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Tablets

United States Consumer & Enterprise Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	33,927	38,170	37,252	36,610	35,819	34,946	-2.2%	
AGR	-35.0%	12.5%	-2.4%	-1.7%	-2.2%	-2.4%		
<b>Revenue (\$M)</b>	16,372	19,292	18,538	18,616	18,598	18,518	-1.0%	
AGR	-26.1%	17.8%	-3.9%	0.4%	-0.1%	-0.4%		
<b>Average Price (\$)</b>	483	505	498	509	519	530	1.2%	
AGR	13.7%	4.7%	-1.5%	2.2%	2.1%	2.1%		
<b>Installed Base (K)</b>	222,727	221,303	217,879	211,694	203,947	192,135	-3.5%	
AGR	-1.5%	-0.6%	-1.5%	-2.8%	-3.7%	-5.8%		
<b>Removal Age (Y)</b>	5.17	5.44	5.86	6.49	6.85	6.68	5.3%	
AGR	23.9%	5.2%	7.8%	10.7%	5.4%	-2.5%		
<b>Average Installed Base Age (Y)</b>	5.69	5.93	6.12	6.19	6.17	6.17	1.0%	
AGR	7.2%	4.3%	3.1%	1.1%	-0.2%	0.0%		
<b>Replacement Cycle Length (Y)</b>	6.96	6.59	6.36	5.95	5.68	5.11	-6.2%	
AGR	18.0%	-5.4%	-3.5%	-6.4%	-4.5%	-10.1%		
<b>Units per Households &amp; Businesses (#)</b>	2.37	2.30	2.21	2.09	1.97	1.81	-5.8%	
AGR	-4.1%	-3.0%	-3.8%	-5.2%	-6.0%	-8.1%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	67.3%	68.2%	69.2%	70.3%	71.4%	72.6%	5.2%	

∞ ∫ Δ Daniel Research Group ©(2024)

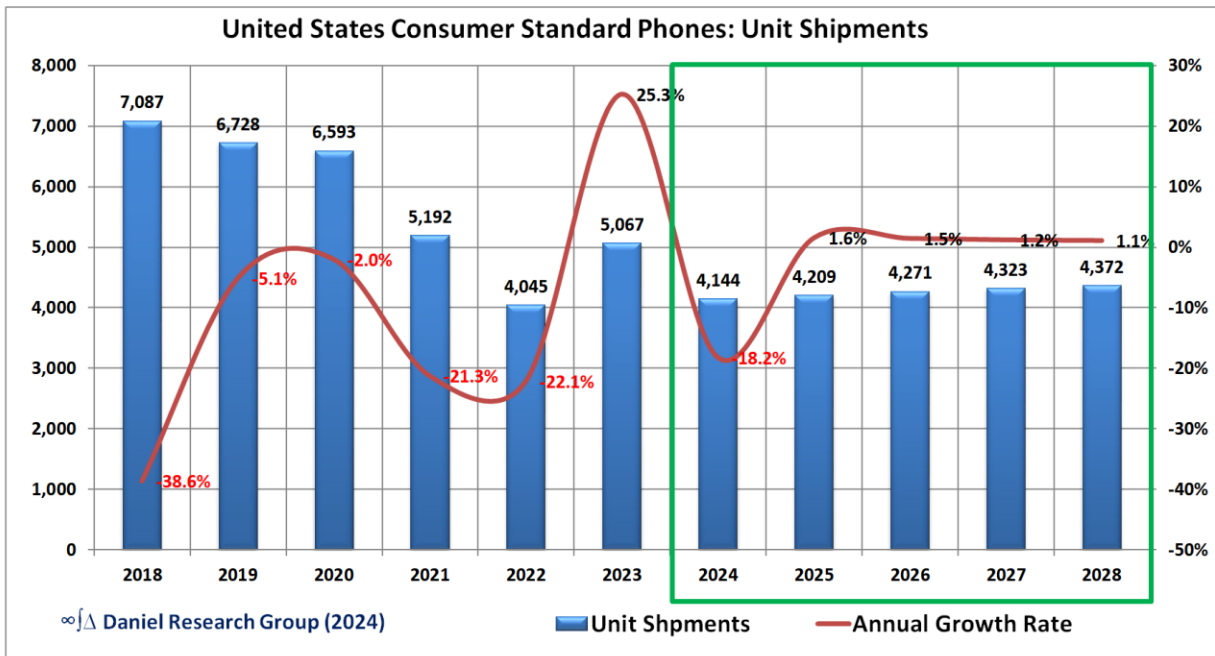


# Mobile Phones

## Consumer Standard

United States Consumer Standard Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	5,067	4,144	4,209	4,271	4,323	4,372	1.3%	
AGR	25.3%	-18.2%	1.6%	1.5%	1.2%	1.1%		
<b>Revenue (\$M)</b>	349	291	302	313	324	334	3.5%	
AGR	7.5%	-16.6%	3.6%	3.6%	3.4%	3.3%		
<b>Average Price (\$)</b>	69	70	72	73	75	77	2.1%	
AGR	-14.2%	2.0%	2.1%	2.1%	2.2%	2.2%		
<b>Installed Base (K)</b>	45,227	35,910	27,766	23,614	20,760	18,932	-14.8%	
AGR	-22.4%	-20.6%	-22.7%	-15.0%	-12.1%	-8.8%		
<b>Removal Age (Y)</b>	9.94	9.68	9.49	7.98	7.27	6.42	-9.8%	
AGR	-2.2%	-2.6%	-2.0%	-15.9%	-8.9%	-11.7%		
<b>Average Installed Base Age (Y)</b>	7.17	6.78	5.99	5.55	5.15	4.87	-7.9%	
AGR	-5.3%	-5.5%	-11.6%	-7.3%	-7.3%	-5.4%		
<b>Replacement Cycle Length (Y)</b>	3.49	3.67	3.25	3.80	3.89	4.05	2.5%	
AGR	-1.2%	5.0%	-11.4%	17.1%	2.3%	4.1%		
<b>Units per Households (#)</b>	2.73	2.60	2.42	2.50	2.66	2.96	3.3%	
AGR	-7.7%	-4.8%	-6.7%	2.9%	6.8%	11.0%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	12.5%	10.3%	8.4%	6.9%	5.6%	4.6%	-7.9%	

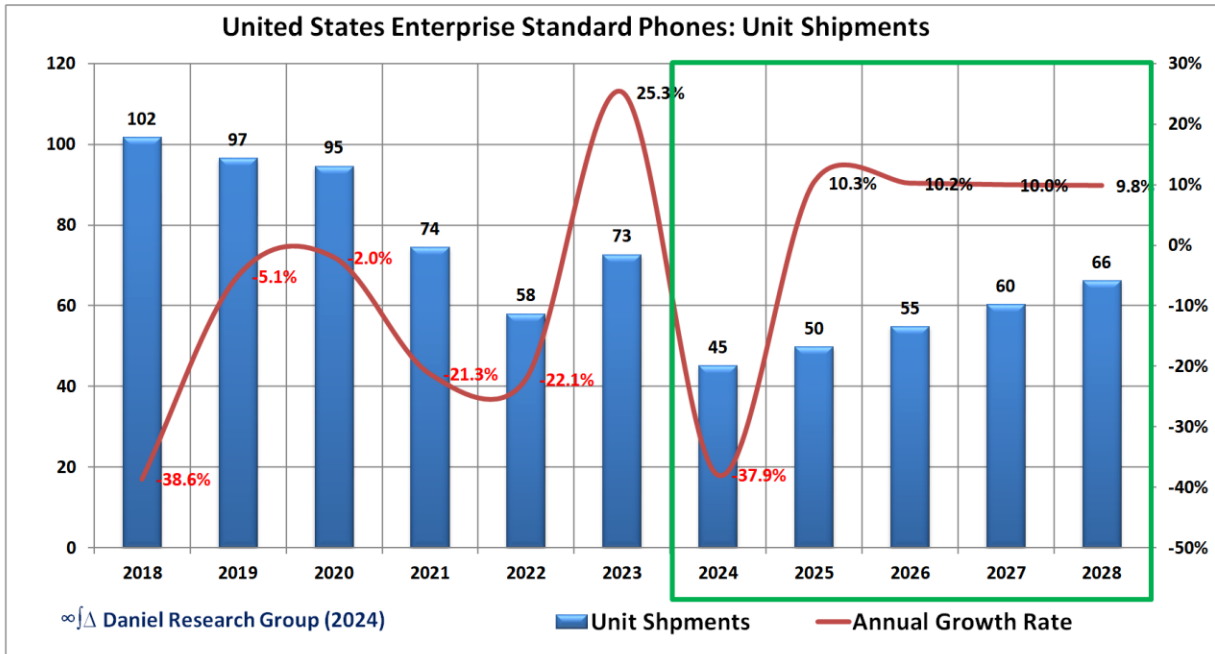
∞ ∫ Δ Daniel Research Group ©(2024)



# Enterprise Standard

United States Enterprise Standard Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	73	45	50	55	60	66	10.1%	
AGR	25.3%	-37.9%	10.3%	10.2%	10.0%	9.8%		
<b>Revenue (\$M)</b>	27	18	21	25	29	33	16.9%	
AGR	7.5%	-34.0%	17.2%	17.0%	16.7%	16.5%		
<b>Average Price (\$)</b>	373	397	421	447	475	504	6.2%	
AGR	-14.2%	6.3%	6.3%	6.2%	6.1%	6.1%		
<b>Installed Base (K)</b>	488	306	262	236	220	208	-9.3%	
AGR	-71.5%	-37.1%	-14.4%	-10.1%	-6.6%	-5.8%		
<b>Removal Age (Y)</b>	10.20	8.69	6.89	6.13	5.30	4.85	-13.5%	
AGR	-2.0%	-14.8%	-20.7%	-11.0%	-13.5%	-8.5%		
<b>Average Installed Base Age (Y)</b>	5.98	4.84	4.55	4.29	4.12	3.90	-5.3%	
AGR	-28.6%	-19.1%	-6.0%	-5.7%	-4.1%	-5.2%		
<b>Replacement Cycle Length (Y)</b>	1.38	2.35	3.80	3.90	3.91	3.63	11.4%	
AGR	-35.5%	71.1%	61.4%	2.7%	0.2%	-7.1%		
<b>Units per Businesses (#)</b>	2.79	2.44	2.93	3.73	4.95	6.65	28.5%	
AGR	-60.7%	-12.6%	20.5%	27.0%	32.8%	34.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	2.6%	1.8%	1.3%	0.9%	0.6%	0.4%	-2.1%	

∞ ∫ Δ Daniel Research Group ©(2024)

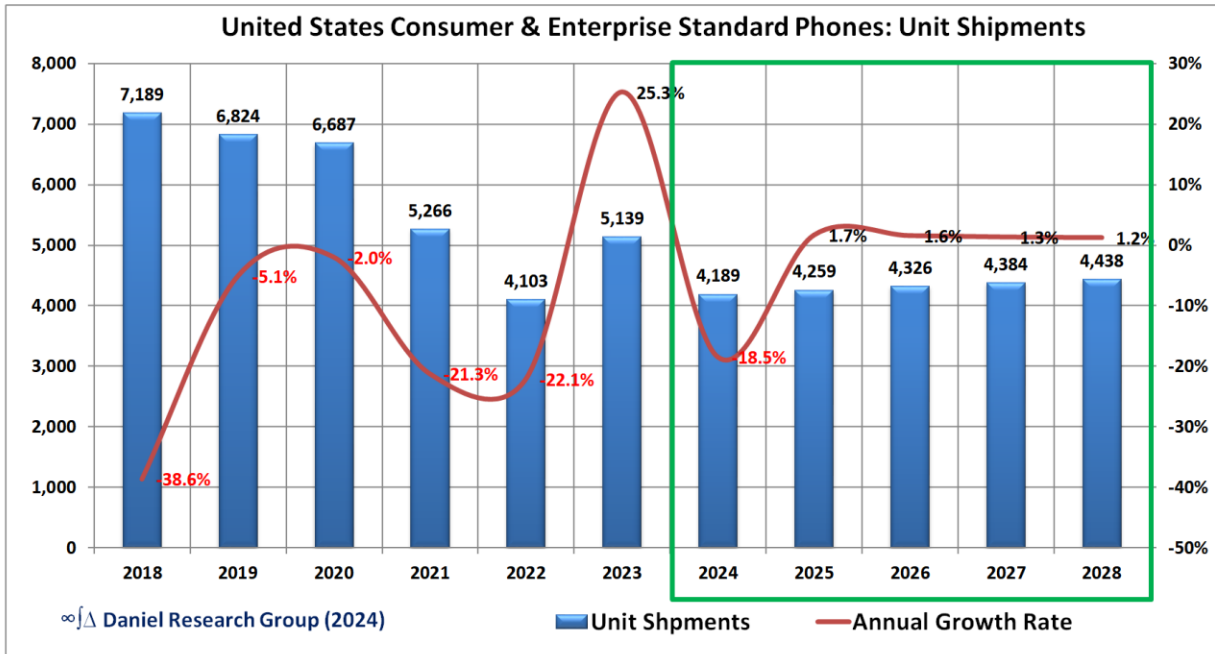




# Total Standard

United States Consumer & Enterprise Standard Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	5,139	4,189	4,259	4,326	4,384	4,438	1.5%	
AGR	25.3%	-18.5%	1.7%	1.6%	1.3%	1.2%		
<b>Revenue (\$M)</b>	376	309	323	337	352	368	4.4%	
AGR	7.5%	-17.8%	4.4%	4.5%	4.4%	4.4%		
<b>Average Price (\$)</b>	73	74	76	78	80	83	2.9%	
AGR	-14.2%	0.8%	2.7%	2.9%	3.0%	3.1%		
<b>Installed Base (K)</b>	45,715	36,216	28,029	23,850	20,981	19,140	-14.7%	
AGR	-23.8%	-20.8%	-22.6%	-14.9%	-12.0%	-8.8%		
<b>Removal Age (Y)</b>	9.78	9.76	9.81	7.97	7.24	6.38	-10.1%	
AGR	-4.0%	-0.2%	0.5%	-18.8%	-9.2%	-11.8%		
<b>Average Installed Base Age (Y)</b>	7.27	6.87	5.96	5.52	5.12	4.84	-8.4%	
AGR	-4.6%	-5.6%	-13.2%	-7.4%	-7.3%	-5.4%		
<b>Replacement Cycle Length (Y)</b>	3.35	3.65	3.25	3.80	3.89	4.05	2.7%	
AGR	-2.8%	8.8%	-10.8%	17.0%	2.3%	4.0%		
<b>Units per Households &amp; Businesses (#)</b>	2.73	2.60	2.43	2.50	2.68	2.98	3.5%	
AGR	-9.2%	-4.8%	-6.5%	3.1%	6.9%	11.2%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	12.0%	9.9%	8.1%	6.6%	5.4%	4.4%	-7.6%	

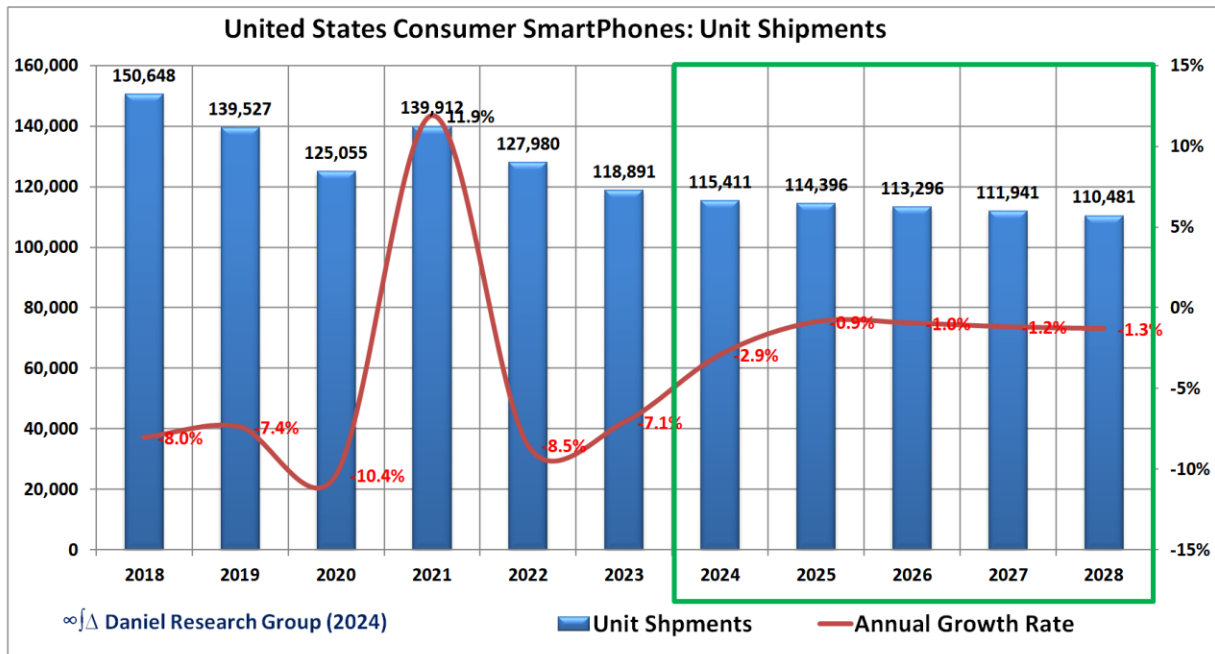
∞ ∫ Δ Daniel Research Group ©(2024)



# Consumer Smartphone

United States Consumer SmartPhones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	118,891	115,411	114,396	113,296	111,941	110,481	-1.1%	
AGR	-7.1%	-2.9%	-0.9%	-1.0%	-1.2%	-1.3%		
<b>Revenue (\$M)</b>	97,070	95,187	95,308	95,351	95,168	94,881	-0.1%	
AGR	4.8%	-1.9%	0.1%	0.0%	-0.2%	-0.3%		
<b>Average Price (\$)</b>	816	825	833	842	850	859	1.0%	
AGR	12.8%	1.0%	1.0%	1.0%	1.0%	1.0%		
<b>Installed Base (K)</b>	301,565	296,535	289,152	281,044	273,239	259,773	-3.3%	
AGR	1.1%	-1.7%	-2.5%	-2.8%	-2.8%	-4.9%		
<b>Removal Age (Y)</b>	3.07	3.57	3.62	3.61	3.56	3.79	1.5%	
AGR	-13.3%	16.3%	1.4%	-0.4%	-1.3%	6.5%		
<b>Average Installed Base Age (Y)</b>	3.53	3.54	3.53	3.50	3.48	3.33	-1.5%	
AGR	5.0%	0.4%	-0.4%	-0.7%	-0.6%	-4.3%		
<b>Replacement Cycle Length (Y)</b>	3.61	3.46	3.37	3.31	3.28	3.10	-2.8%	
AGR	21.6%	-4.1%	-2.5%	-1.8%	-1.0%	-5.7%		
<b>Units per Households (#)</b>	2.41	2.31	2.21	2.11	2.02	1.90	-4.8%	
AGR	-1.9%	-4.0%	-4.4%	-4.5%	-4.2%	-6.2%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	94.2%	95.5%	96.5%	97.3%	97.9%	98.4%	4.2%	

∞ ∫ Δ Daniel Research Group ©(2024)



∞ ∫ Δ Daniel Research Group (2024)

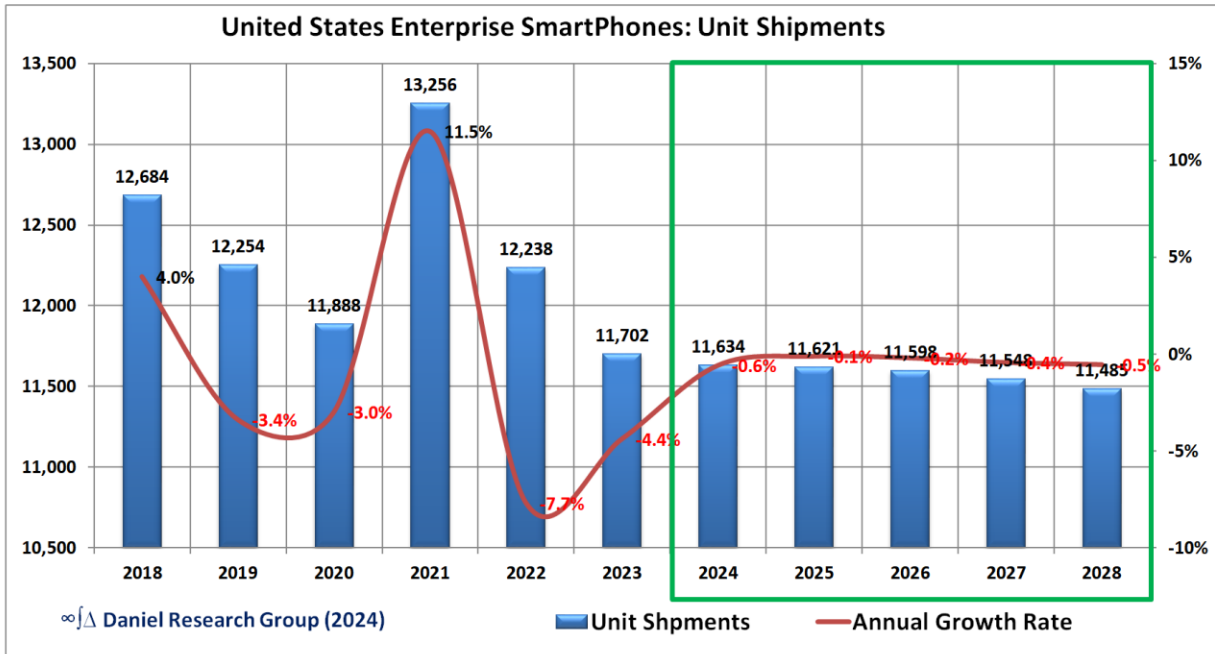
■ Unit Shpments

— Annual Growth Rate

# Enterprise Smartphone

United States Enterprise SmartPhones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	11,702	11,634	11,621	11,598	11,548	11,485	-0.3%	
AGR	-4.4%	-0.6%	-0.1%	-0.2%	-0.4%	-0.5%		
<b>Revenue (\$M)</b>	10,750	10,957	11,220	11,480	11,719	11,949	2.2%	
AGR	5.9%	1.9%	2.4%	2.3%	2.1%	2.0%		
<b>Average Price (\$)</b>	919	942	966	990	1,015	1,040	2.5%	
AGR	10.7%	2.5%	2.5%	2.5%	2.5%	2.5%		
<b>Installed Base (K)</b>	16,977	15,295	14,355	13,777	13,365	13,051	-3.9%	
AGR	-18.1%	-9.9%	-6.1%	-4.0%	-3.0%	-2.4%		
<b>Removal Age (Y)</b>	3.04	2.60	2.43	2.31	2.24	2.19	-4.2%	
AGR	21.2%	-14.5%	-6.7%	-4.7%	-3.0%	-2.4%		
<b>Average Installed Base Age (Y)</b>	2.46	2.34	2.24	2.18	2.14	2.11	-2.5%	
AGR	-9.5%	-5.0%	-4.0%	-2.9%	-2.1%	-1.1%		
<b>Replacement Cycle Length (Y)</b>	2.10	2.15	2.14	2.13	2.12	2.11	-0.5%	
AGR	-23.9%	2.4%	-0.3%	-0.5%	-0.7%	-0.5%		
<b>Units per Businesses (#)</b>	17.22	18.17	20.27	23.27	27.22	32.21	15.4%	
AGR	-5.0%	5.5%	11.5%	14.8%	17.0%	18.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	14.6%	12.2%	10.2%	8.4%	7.0%	5.7%	-8.8%	

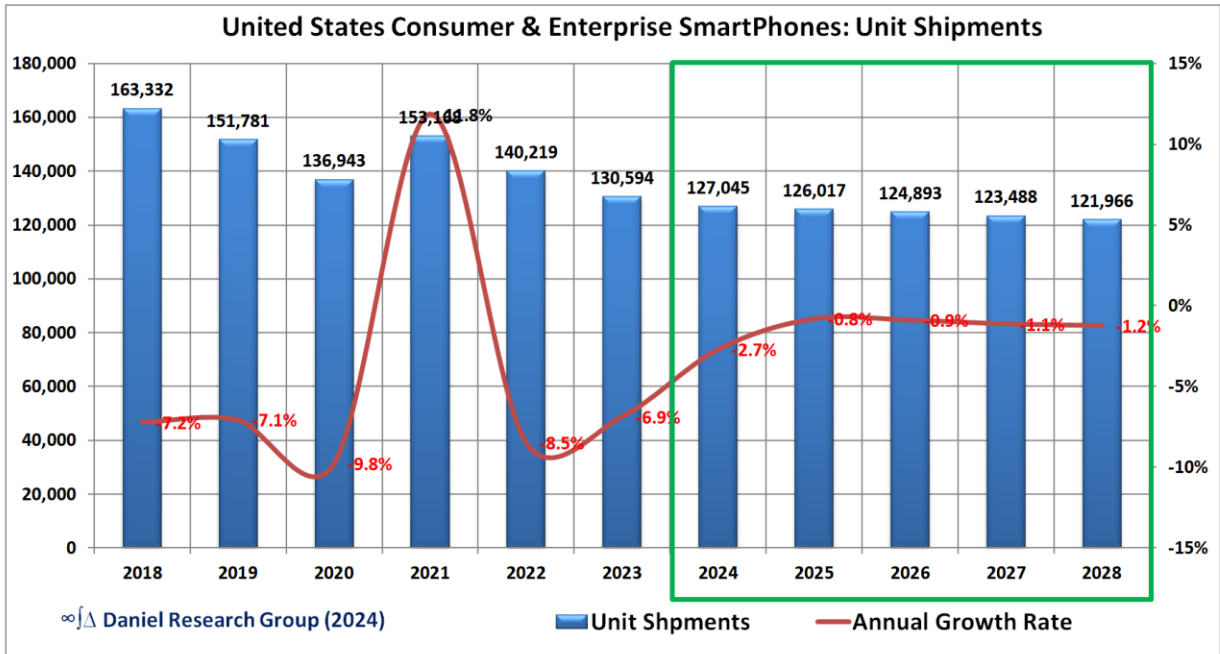
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Smartphone

United States Consumer & Enterprise SmartPhones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	130,594	127,045	126,017	124,893	123,488	121,966	-1.0%	
AGR	-6.9%	-2.7%	-0.8%	-0.9%	-1.1%	-1.2%		
<b>Revenue (\$M)</b>	107,820	106,144	106,529	106,831	106,886	106,830	0.2%	
AGR	4.9%	-1.6%	0.4%	0.3%	0.1%	-0.1%		
<b>Average Price (\$)</b>	826	835	845	855	866	876	1.2%	
AGR	12.6%	1.2%	1.2%	1.2%	1.2%	1.2%		
<b>Installed Base (K)</b>	318,543	311,830	303,507	294,821	286,605	272,824	-3.3%	
AGR	-0.1%	-2.1%	-2.7%	-2.9%	-2.8%	-4.8%		
<b>Removal Age (Y)</b>	3.03	3.48	3.52	3.49	3.80	3.29	-1.4%	
AGR	-12.9%	15.0%	1.1%	-0.7%	8.7%	-13.5%		
<b>Average Installed Base Age (Y)</b>	3.49	3.50	3.48	3.45	3.26	3.29	-1.5%	
AGR	5.1%	0.3%	-0.6%	-0.8%	-5.4%	0.8%		
<b>Replacement Cycle Length (Y)</b>	3.43	3.33	3.26	3.21	3.18	3.01	-2.5%	
AGR	16.2%	-2.9%	-2.2%	-1.6%	-1.0%	-5.2%		
<b>Units per Households &amp; Businesses (#)</b>	2.52	2.42	2.31	2.21	2.11	1.99	-4.8%	
AGR	-3.0%	-4.3%	-4.4%	-4.4%	-4.2%	-6.0%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	90.4%	91.4%	92.3%	92.9%	93.5%	93.9%	3.5%	

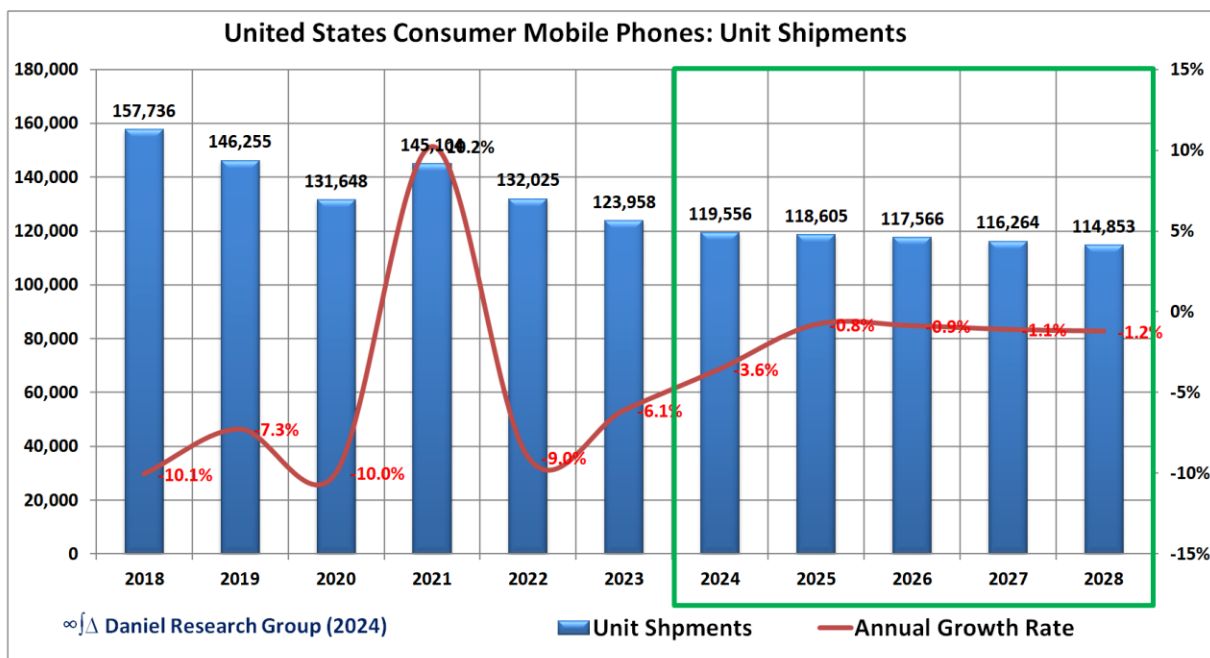
∞ ∫ Δ Daniel Research Group ©(2024)



## Consumer Total

United States Consumer Mobile Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	123,958	119,556	118,605	117,566	116,264	114,853	-1.0%	
AGR	-6.1%	-3.6%	-0.8%	-0.9%	-1.1%	-1.2%		
<b>Revenue (\$M)</b>	97,419	95,478	95,610	95,664	95,492	95,216	-0.1%	
AGR	4.8%	-2.0%	0.1%	0.1%	-0.2%	-0.3%		
<b>Average Price (\$)</b>	786	799	806	814	821	829	0.9%	
AGR	11.6%	1.6%	0.9%	0.9%	0.9%	0.9%		
<b>Installed Base (K)</b>	346,793	332,445	316,919	304,658	294,000	278,705	-4.3%	
AGR	-2.7%	-4.1%	-4.7%	-3.9%	-3.5%	-5.2%		
<b>Removal Age (Y)</b>	3.30	3.99	3.94	3.87	3.75	3.62	-2.4%	
AGR	-25.4%	21.0%	-1.3%	-2.0%	-3.0%	-3.5%		
<b>Average Installed Base Age (Y)</b>	3.80	3.76	3.70	3.63	3.57	3.54	-1.5%	
AGR	6.0%	-1.1%	-1.6%	-2.0%	-1.5%	-0.8%		
<b>Replacement Cycle Length (Y)</b>	3.59	3.48	3.36	3.35	3.32	3.14	-2.5%	
AGR	18.1%	-3.1%	-3.4%	-0.5%	-0.9%	-5.3%		
<b>Units per Households (#)</b>	2.61	2.48	2.34	2.23	2.13	2.00	-5.2%	
AGR	-4.1%	-5.2%	-5.6%	-4.8%	-4.4%	-6.0%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%	0.1%	

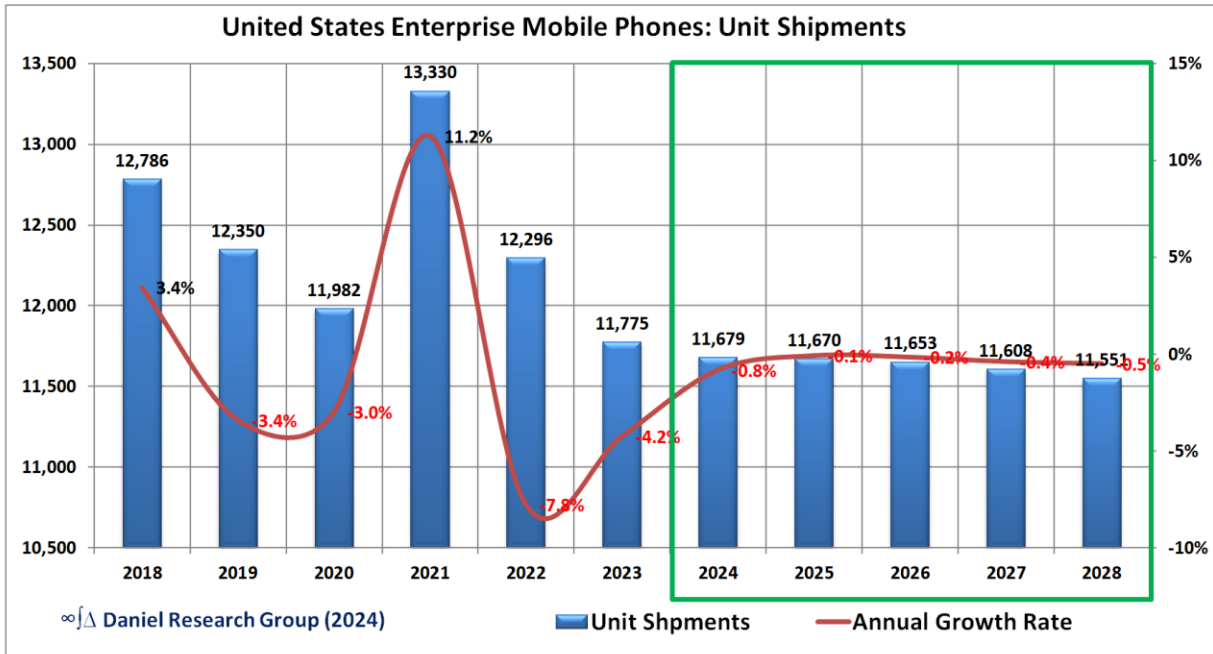
∞ ∫ Δ Daniel Research Group ©(2024)



# Enterprise Total

United States Enterprise Mobile Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	11,775	11,679	11,670	11,653	11,608	11,551	-0.3%	
AGR	-4.2%	-0.8%	-0.1%	-0.2%	-0.4%	-0.5%		
<b>Revenue (\$M)</b>	10,778	10,975	11,241	11,505	11,747	11,982	2.2%	
AGR	5.9%	1.8%	2.4%	2.3%	2.1%	2.0%		
<b>Average Price (\$)</b>	915	940	963	987	1,012	1,037	2.5%	
AGR	10.6%	2.7%	2.5%	2.5%	2.5%	2.5%		
<b>Installed Base (K)</b>	17,465	15,601	14,617	14,013	13,586	13,258	-4.0%	
AGR	-22.2%	-10.7%	-6.3%	-4.1%	-3.0%	-2.4%		
<b>Removal Age (Y)</b>	3.28	2.86	2.46	2.33	2.26	2.20	-6.4%	
AGR	16.6%	-12.8%	-14.0%	-5.2%	-3.4%	-2.5%		
<b>Average Installed Base Age (Y)</b>	2.67	2.37	2.26	2.19	2.15	2.13	-2.6%	
AGR	-11.2%	-11.2%	-4.5%	-3.1%	-2.0%	-1.0%		
<b>Replacement Cycle Length (Y)</b>	2.04	2.15	2.16	2.14	2.13	2.12	-0.4%	
AGR	-23.9%	5.4%	0.1%	-0.6%	-0.7%	-0.6%		
<b>Units per Businesses (#)</b>	16.27	18.79	23.25	29.77	38.96	51.71	28.8%	
AGR	-1.2%	15.5%	23.7%	28.0%	30.9%	32.7%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	15.9%	12.0%	9.0%	6.7%	5.0%	3.6%	-12.2%	

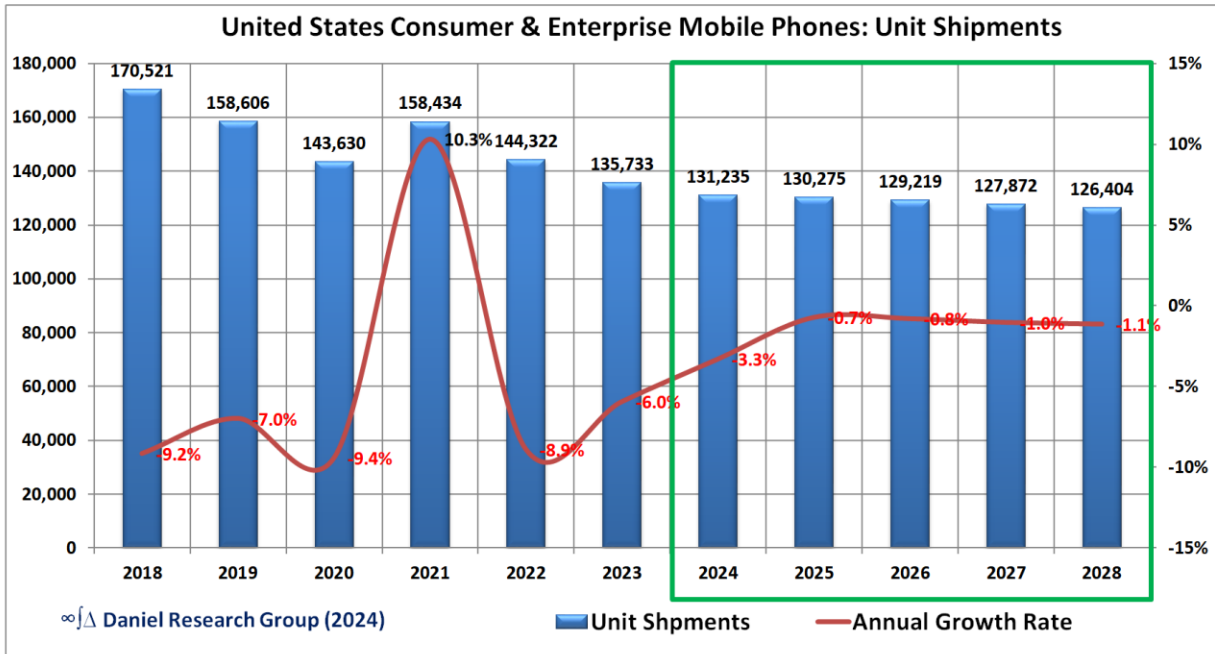
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Mobile Phones

United States Consumer & Enterprise Mobile Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	135,733	131,235	130,275	129,219	127,872	126,404	-0.9%	
AGR	-6.0%	-3.3%	-0.7%	-0.8%	-1.0%	-1.1%		
<b>Revenue (\$M)</b>	108,197	106,453	106,852	107,168	107,239	107,198	0.2%	
AGR	4.9%	-1.6%	0.4%	0.3%	0.1%	0.0%		
<b>Average Price (\$)</b>	797	811	820	829	839	848	1.1%	
AGR	11.5%	1.8%	1.1%	1.1%	1.1%	1.1%		
<b>Installed Base (K)</b>	364,257	348,046	331,536	318,671	307,585	291,964	-4.3%	
AGR	-3.9%	-4.5%	-4.7%	-3.9%	-3.5%	-5.1%		
<b>Removal Age (Y)</b>	3.25	3.88	3.83	3.74	3.64	3.85	-0.2%	
AGR	-24.7%	19.4%	-1.4%	-2.3%	-2.8%	5.9%		
<b>Average Installed Base Age (Y)</b>	3.76	3.71	3.65	3.57	3.51	3.31	-2.8%	
AGR	6.0%	-1.2%	-1.8%	-2.0%	-1.7%	-5.6%		
<b>Replacement Cycle Length (Y)</b>	3.42	3.36	3.26	3.24	3.21	3.06	-2.3%	
AGR	13.4%	-1.8%	-3.0%	-0.5%	-0.9%	-4.9%		
<b>Units per Households &amp; Businesses (#)</b>	2.61	2.46	2.33	2.22	2.12	2.00	-5.1%	
AGR	-5.2%	-5.5%	-5.6%	-4.8%	-4.3%	-5.9%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	

∞ ∫ Δ Daniel Research Group ©(2024)



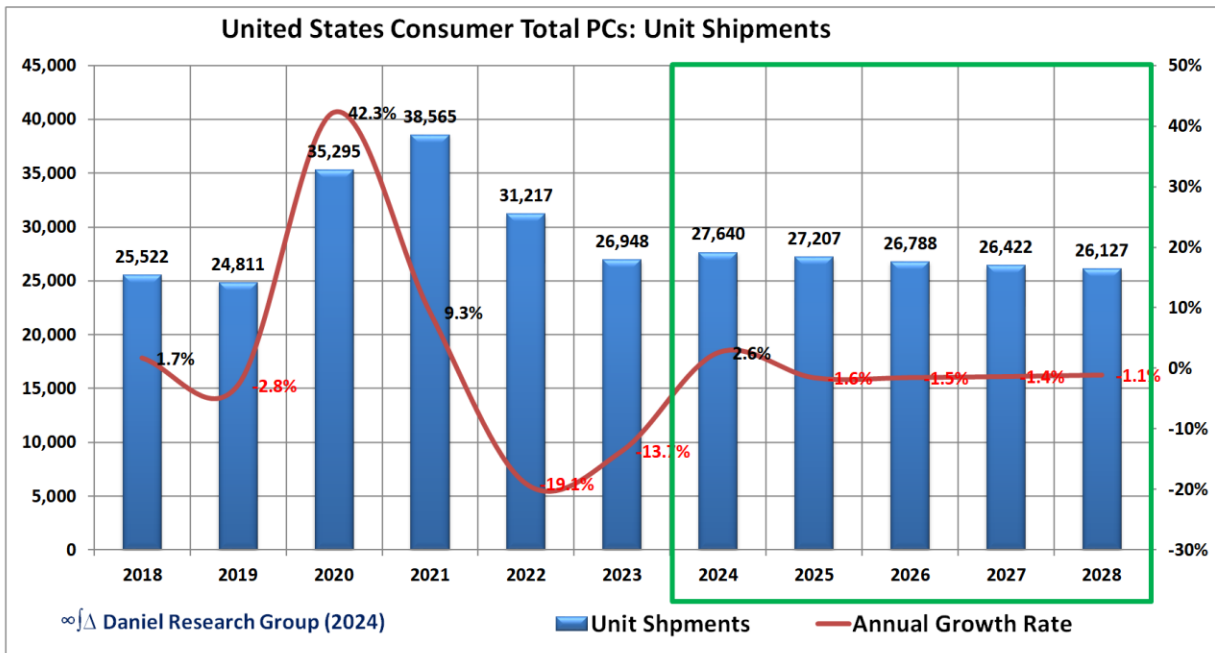
# Market Aggregations

## Total PCs (Desktop and Mobile)

### Consumer PCs

United States Consumer Total PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	26,948	27,640	27,207	26,788	26,422	26,127	-1.4%	
AGR	-13.7%	2.6%	-1.6%	-1.5%	-1.4%	-1.1%		
<b>Revenue (\$M)</b>	30,843	33,439	35,096	36,793	38,724	40,930	5.2%	
AGR	-15.2%	8.4%	5.0%	4.8%	5.2%	5.7%		
<b>Average Price (\$)</b>	1,145	1,210	1,290	1,373	1,466	1,567	6.7%	
AGR	-1.8%	5.7%	6.6%	6.5%	6.7%	6.9%		
<b>Installed Base (K)</b>	150,494	152,428	152,904	151,811	144,994	142,163	-1.7%	
AGR	2.2%	1.3%	0.3%	-0.7%	-4.5%	-2.0%		
<b>Removal Age (Y)</b>	4.07	4.39	6.24	6.48	6.05	6.57	10.6%	
AGR	-45.2%	7.9%	42.2%	3.7%	-6.7%	8.7%		
<b>Average Installed Base Age (Y)</b>	5.23	5.59	5.66	5.69	5.81	5.79	0.8%	
AGR	8.6%	6.9%	1.2%	0.6%	1.9%	-0.3%		
<b>Replacement Cycle Length (Y)</b>	7.34	6.93	6.72	6.44	5.36	5.91	-3.9%	
AGR	19.5%	-5.6%	-3.0%	-4.1%	-16.8%	10.2%		
<b>Units per Households (#)</b>	1.27	1.26	1.25	1.22	1.15	1.11	-3.2%	
AGR	0.1%	-0.4%	-1.2%	-2.2%	-5.9%	-3.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	89.1%	89.7%	90.3%	90.9%	91.4%	91.9%	2.8%	

∞ Δ Daniel Research Group ©(2024)

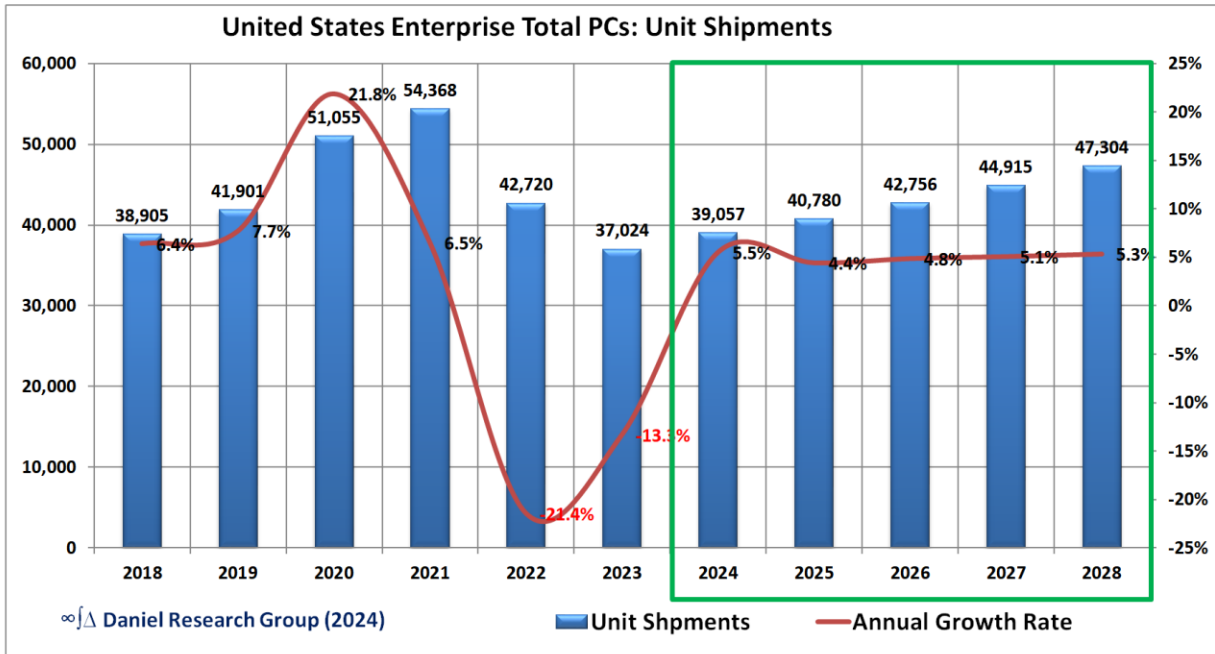




# Enterprise PCs

United States Enterprise Total PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	37,024	39,057	40,780	42,756	44,915	47,304	4.9%	
AGR	-13.3%	5.5%	4.4%	4.8%	5.1%	5.3%		
<b>Revenue (\$M)</b>	25,471	27,001	28,251	29,664	31,193	32,874	5.0%	
AGR	-19.9%	6.0%	4.6%	5.0%	5.2%	5.4%		
<b>Average Price (\$)</b>	688	691	693	694	694	695	0.1%	
AGR	-7.6%	0.5%	0.2%	0.1%	0.1%	0.1%		
<b>Installed Base (K)</b>	155,657	167,214	175,213	180,009	187,578	194,891	3.9%	
AGR	8.6%	7.4%	4.8%	2.7%	4.2%	3.9%		
<b>Removal Age (Y)</b>	3.50	3.78	3.99	6.24	5.27	6.24	13.4%	
AGR	-30.5%	8.1%	5.5%	56.6%	-15.5%	18.4%		
<b>Average Installed Base Age (Y)</b>	4.88	5.08	5.29	5.05	4.99	4.73	-1.8%	
AGR	5.1%	4.2%	4.1%	-4.7%	-1.1%	-5.3%		
<b>Replacement Cycle Length (Y)</b>	7.31	7.08	6.34	5.74	6.02	5.87	-4.6%	
AGR	61.8%	-3.2%	-10.4%	-9.5%	4.9%	-2.5%		
<b>Units per Businesses (#)</b>	23.02	24.24	25.14	25.64	26.63	27.65	3.4%	
AGR	6.0%	5.3%	3.7%	2.0%	3.9%	3.8%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	

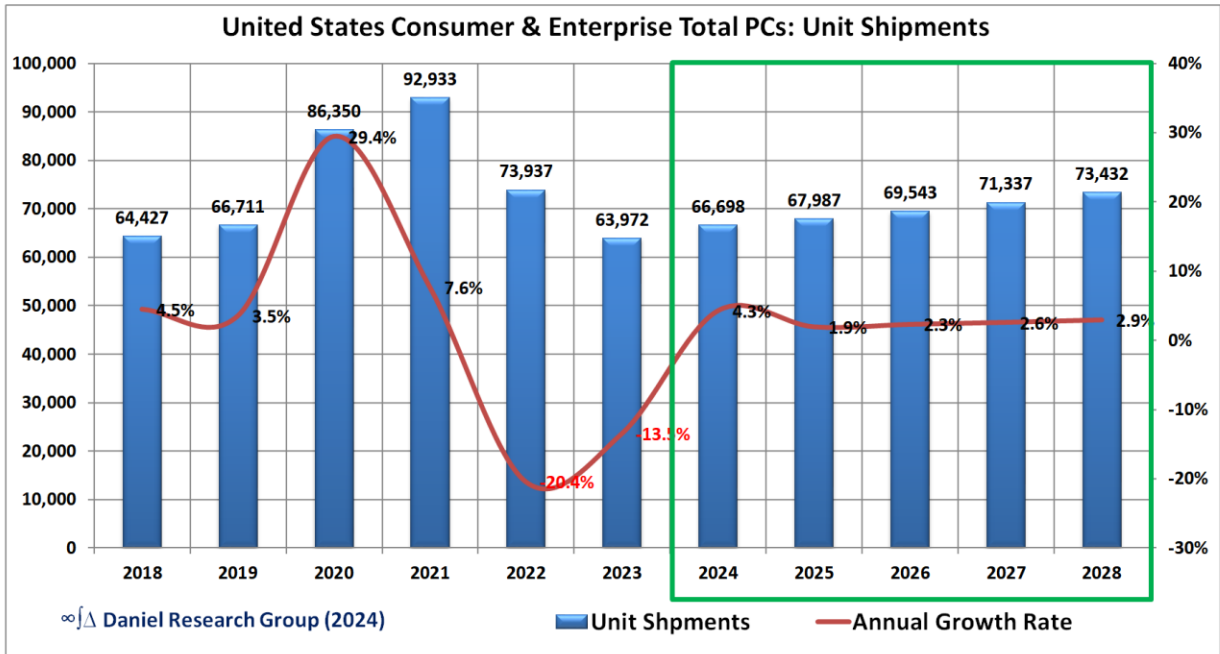
∞Δ Daniel Research Group ©(2024)



# Total PCs

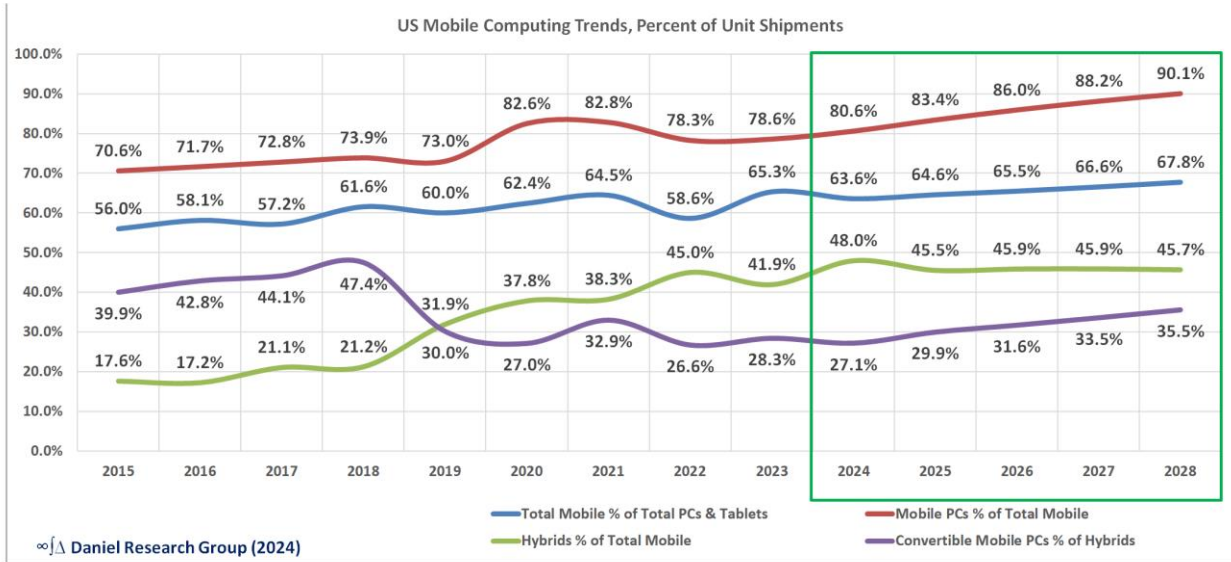
United States Consumer & Enterprise Total PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	63,972	66,698	67,987	69,543	71,337	73,432	2.4%	
AGR	-13.5%	4.3%	1.9%	2.3%	2.6%	2.9%		
<b>Revenue (\$M)</b>	56,314	60,439	63,347	66,457	69,917	73,804	5.1%	
AGR	-17.4%	7.3%	4.8%	4.9%	5.2%	5.6%		
<b>Average Price (\$)</b>	880	906	932	956	980	1,005	2.6%	
AGR	-4.5%	2.9%	2.8%	2.6%	2.6%	2.5%		
<b>Installed Base (K)</b>	306,151	319,641	328,117	331,820	332,572	337,054	1.3%	
AGR	5.4%	4.4%	2.7%	1.1%	0.2%	1.3%		
<b>Removal Age (Y)</b>	3.78	4.07	5.77	5.64	5.66	7.22	15.4%	
AGR	-46.3%	7.8%	41.7%	-2.2%	0.3%	27.7%		
<b>Average Installed Base Age (Y)</b>	5.06	5.33	5.33	5.35	5.35	5.01	-1.6%	
AGR	6.8%	5.4%	0.0%	0.4%	0.0%	-6.4%		
<b>Replacement Cycle Length (Y)</b>	7.33	7.01	6.51	6.04	5.71	5.89	-4.3%	
AGR	41.2%	-4.4%	-7.0%	-7.3%	-5.4%	3.1%		
<b>Units per Households &amp; Businesses (#)</b>	2.44	2.51	2.54	2.53	2.50	2.50	-0.1%	
AGR	3.2%	2.6%	1.1%	-0.4%	-1.2%	0.0%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	89.6%	90.2%	90.8%	91.3%	91.8%	92.3%	2.7%	

∞ ∫ Δ Daniel Research Group ©(2024)



# Mobile PCs and Tablets

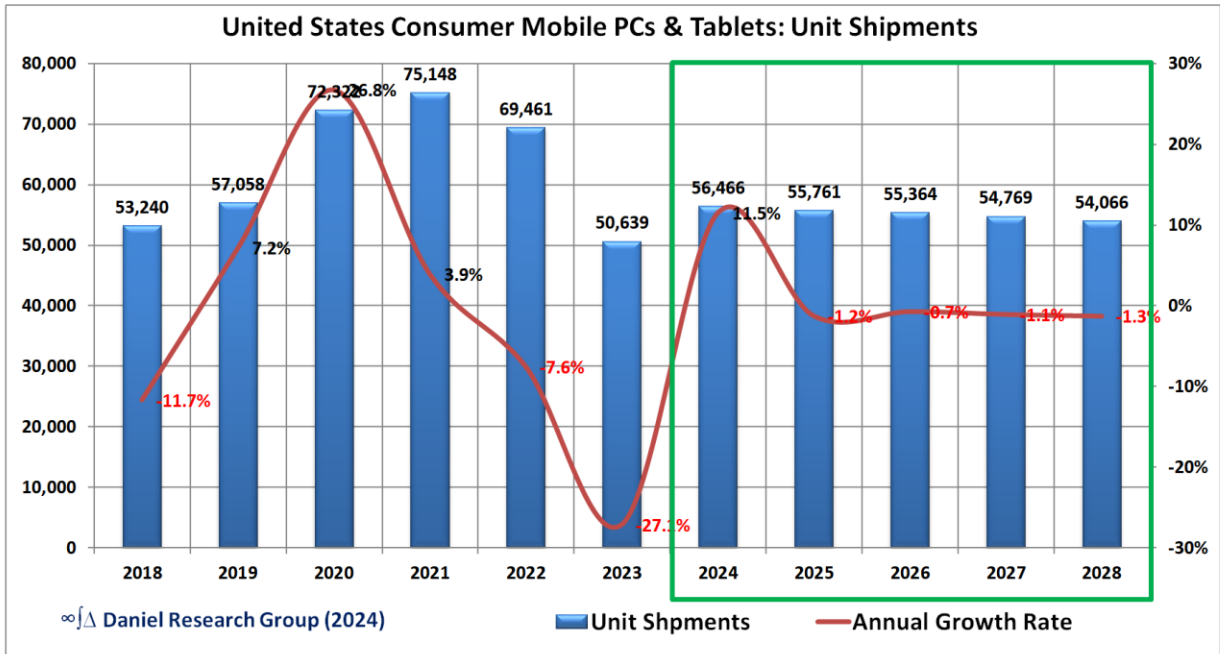
## Mobile Trends



# Consumer

United States Consumer Mobile PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	50,639	56,466	55,761	55,364	54,769	54,066	-1.1%	
AGR	-27.1%	11.5%	-1.2%	-0.7%	-1.1%	-1.3%		
<b>Revenue (\$M)</b>	37,266	43,565	45,250	47,809	50,414	53,142	5.1%	
AGR	-18.7%	16.9%	3.9%	5.7%	5.4%	5.4%		
<b>Average Price (\$)</b>	736	772	811	864	920	983	6.2%	
AGR	11.5%	4.8%	5.2%	6.4%	6.6%	6.8%		
<b>Installed Base (K)</b>	309,051	307,148	302,768	295,026	282,916	271,205	-3.1%	
AGR	-0.9%	-0.6%	-1.4%	-2.6%	-4.1%	-4.1%		
<b>Removal Age (Y)</b>	5.29	5.43	6.03	6.31	7.37	6.17	3.2%	
AGR	22.2%	2.7%	11.1%	4.5%	16.9%	-16.3%		
<b>Average Installed Base Age (Y)</b>	5.48	5.67	5.76	5.77	5.51	5.50	-0.8%	
AGR	5.9%	3.5%	1.4%	0.3%	-4.5%	-0.3%		
<b>Replacement Cycle Length (Y)</b>	6.77	6.26	6.03	5.68	5.23	5.12	-4.9%	
AGR	10.9%	-7.5%	-3.6%	-6.0%	-7.8%	-2.0%		
<b>Units per Households (#)</b>	2.32	2.29	2.23	2.16	2.05	1.95	-3.9%	
AGR	-2.2%	-1.6%	-2.3%	-3.5%	-4.9%	-5.0%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

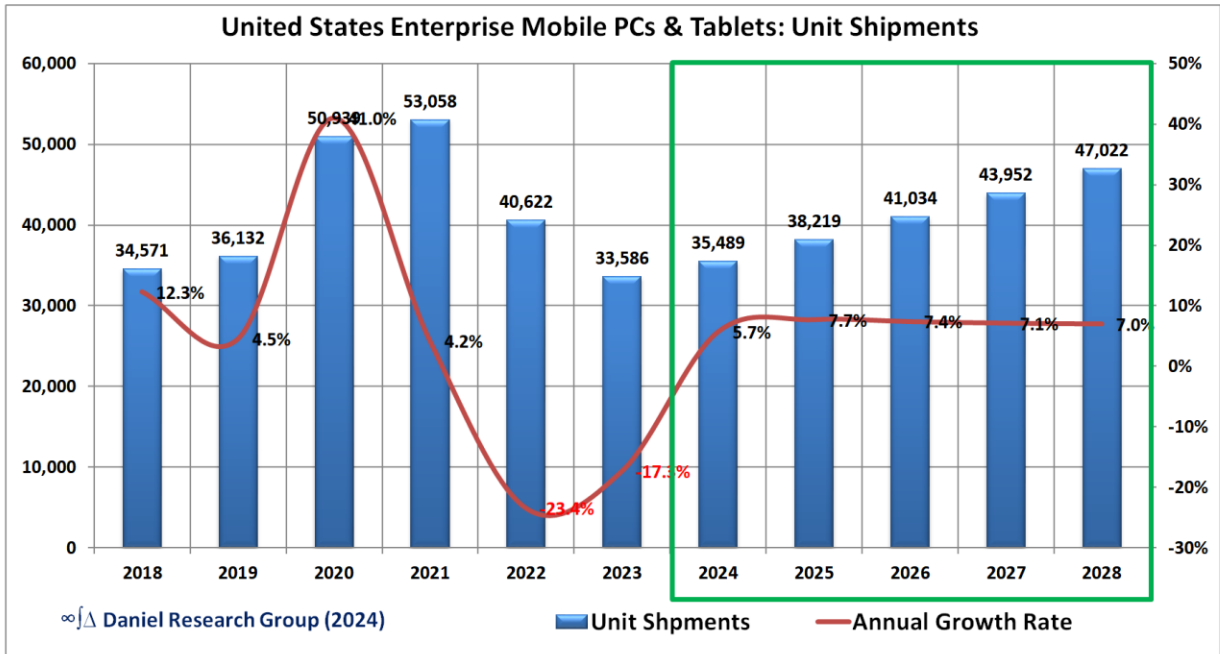
∞ ∫ Δ Daniel Research Group ©(2024)



# Enterprise

United States Enterprise Mobile PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	33,586	35,489	38,219	41,034	43,952	47,022	7.3%	
AGR	-17.3%	5.7%	7.7%	7.4%	7.1%	7.0%		
<b>Revenue (\$M)</b>	22,202	23,378	25,225	27,163	29,176	31,299	7.6%	
AGR	-21.7%	5.3%	7.9%	7.7%	7.4%	7.3%		
<b>Average Price (\$)</b>	661	659	660	662	664	666	0.3%	
AGR	-5.3%	-0.3%	0.2%	0.3%	0.3%	0.3%		
<b>Installed Base (K)</b>	95,763	109,675	123,357	136,171	149,061	161,367	10.1%	
AGR	17.0%	14.5%	12.5%	10.4%	9.5%	8.3%		
<b>Removal Age (Y)</b>	2.27	2.53	2.76	2.97	3.67	3.75	10.3%	
AGR	-31.0%	11.7%	9.1%	7.6%	23.3%	2.3%		
<b>Average Installed Base Age (Y)</b>	3.31	3.59	3.84	4.07	4.16	4.25	4.3%	
AGR	10.1%	8.4%	7.0%	6.0%	2.3%	2.2%		
<b>Replacement Cycle Length (Y)</b>	5.88	6.08	6.03	5.83	5.80	5.65	-1.8%	
AGR	69.8%	3.5%	-0.9%	-3.4%	-0.5%	-2.6%		
<b>Units per Businesses (#)</b>	14.17	15.90	17.70	19.39	21.16	22.90	9.5%	
AGR	14.2%	12.2%	11.3%	9.6%	9.1%	8.2%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	

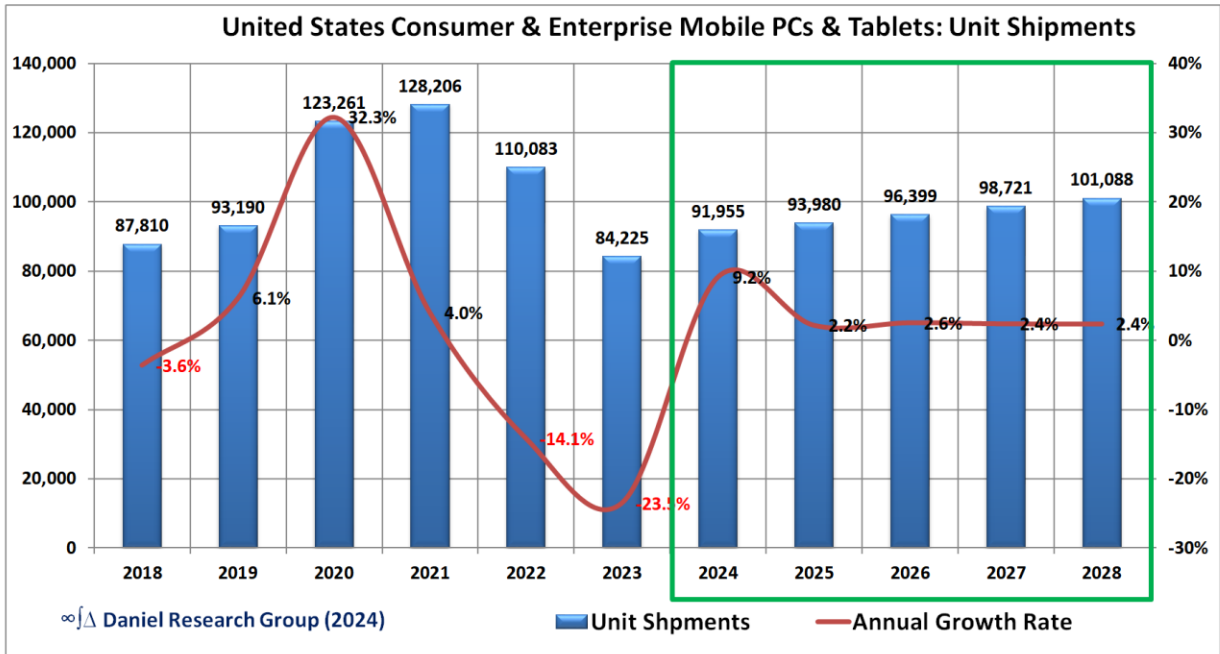
∞ ∫ Δ Daniel Research Group ©(2024)



# Total Mobile PCs and Tablets

United States Consumer & Enterprise Mobile PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	84,225	91,955	93,980	96,399	98,721	101,088	2.4%	
AGR	-23.5%	9.2%	2.2%	2.6%	2.4%	2.4%		
<b>Revenue (\$M)</b>	59,468	66,943	70,474	74,972	79,590	84,442	6.0%	
AGR	-19.9%	12.6%	5.3%	6.4%	6.2%	6.1%		
<b>Average Price (\$)</b>	706	728	750	778	806	835	3.5%	
AGR	4.7%	3.1%	3.0%	3.7%	3.7%	3.6%		
<b>Installed Base (K)</b>	404,814	416,824	426,125	431,197	431,976	432,572	0.9%	
AGR	2.8%	3.0%	2.2%	1.2%	0.2%	0.1%		
<b>Removal Age (Y)</b>	4.39	4.95	6.27	5.47	5.43	5.33	1.9%	
AGR	2.9%	12.8%	26.7%	-12.7%	-0.9%	-1.8%		
<b>Average Installed Base Age (Y)</b>	5.17	5.26	5.10	5.09	5.08	5.06	-0.9%	
AGR	5.2%	1.8%	-3.1%	-0.2%	-0.2%	-0.2%		
<b>Replacement Cycle Length (Y)</b>	6.53	6.21	6.03	5.72	5.41	5.30	-3.9%	
AGR	26.2%	-4.9%	-2.9%	-5.2%	-5.4%	-2.0%		
<b>Units per Households &amp; Businesses (#)</b>	2.90	2.95	2.99	3.00	2.98	2.96	0.1%	
AGR	1.4%	1.9%	1.3%	0.3%	-0.7%	-0.7%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	

∞ ∫ Δ Daniel Research Group ©(2024)



∞ ∫ Δ Daniel Research Group (2024)

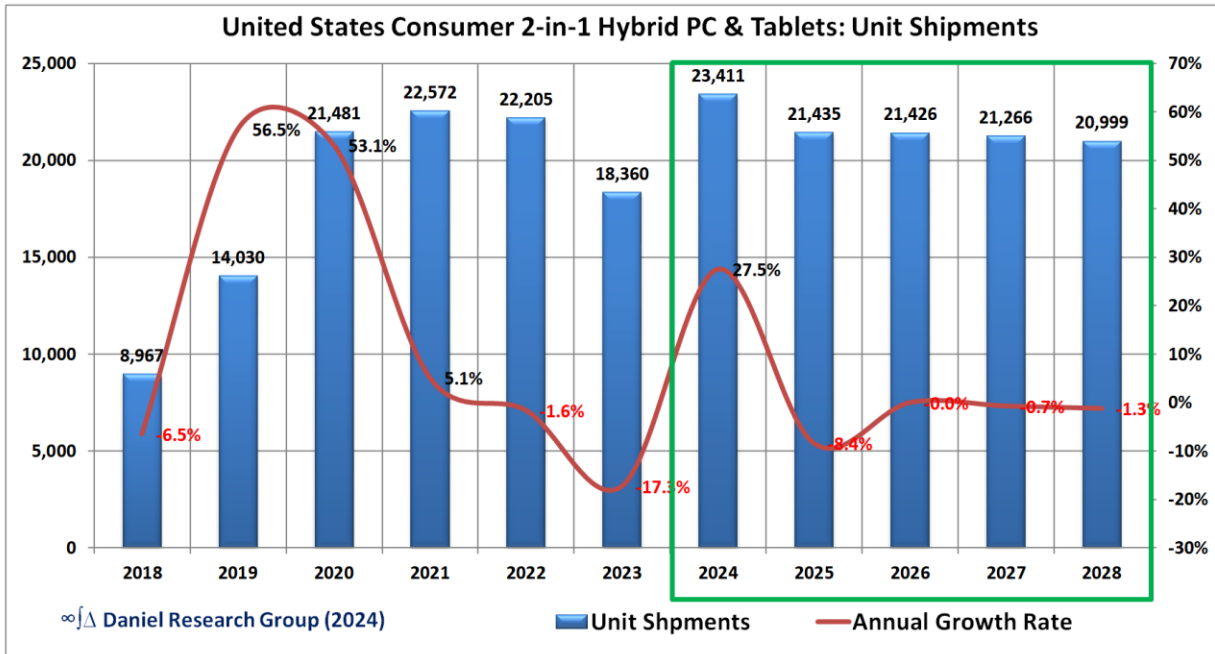
■ Unit Shpments

— Annual Growth Rate

# Hybrids, 2-in-1, Convertible Model PCs, and Detachable Tablets Consumer

United States Consumer 2-in-1 Hybrid PC & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	18,360	23,411	21,435	21,426	21,266	20,999	-2.7%	
AGR	-17.3%	27.5%	-8.4%	0.0%	-0.7%	-1.3%		
<b>Revenue (\$M)</b>	12,479	15,860	14,482	14,435	14,287	14,069	-3.0%	
AGR	-20.1%	27.1%	-8.7%	-0.3%	-1.0%	-1.5%		
<b>Average Price (\$)</b>	680	677	676	674	672	670	-0.3%	
AGR	-3.4%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%		
<b>Installed Base (K)</b>	67,043	73,472	77,923	81,313	84,213	86,801	4.3%	
AGR	9.1%	9.6%	6.1%	4.4%	3.6%	3.1%		
<b>Removal Age (Y)</b>	2.93	2.96	3.39	3.81	3.94	4.26	9.5%	
AGR	33.0%	0.8%	14.7%	12.3%	3.5%	8.0%		
<b>Average Installed Base Age (Y)</b>	3.81	4.02	4.27	4.47	4.68	4.85	4.8%	
AGR	9.9%	5.6%	6.2%	4.7%	4.6%	3.6%		
<b>Replacement Cycle Length (Y)</b>	6.25	5.33	5.59	5.51	5.59	5.71	1.8%	
AGR	11.0%	-14.8%	4.9%	-1.4%	1.4%	2.3%		
<b>Units per Households (#)</b>	2.24	2.27	2.24	2.18	2.11	2.02	-2.9%	
AGR	0.4%	1.4%	-1.4%	-2.4%	-3.6%	-4.2%		
<b>Market Penetration (%)</b>	22.5%	24.1%	25.7%	27.2%	29.0%	30.9%	8.4%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

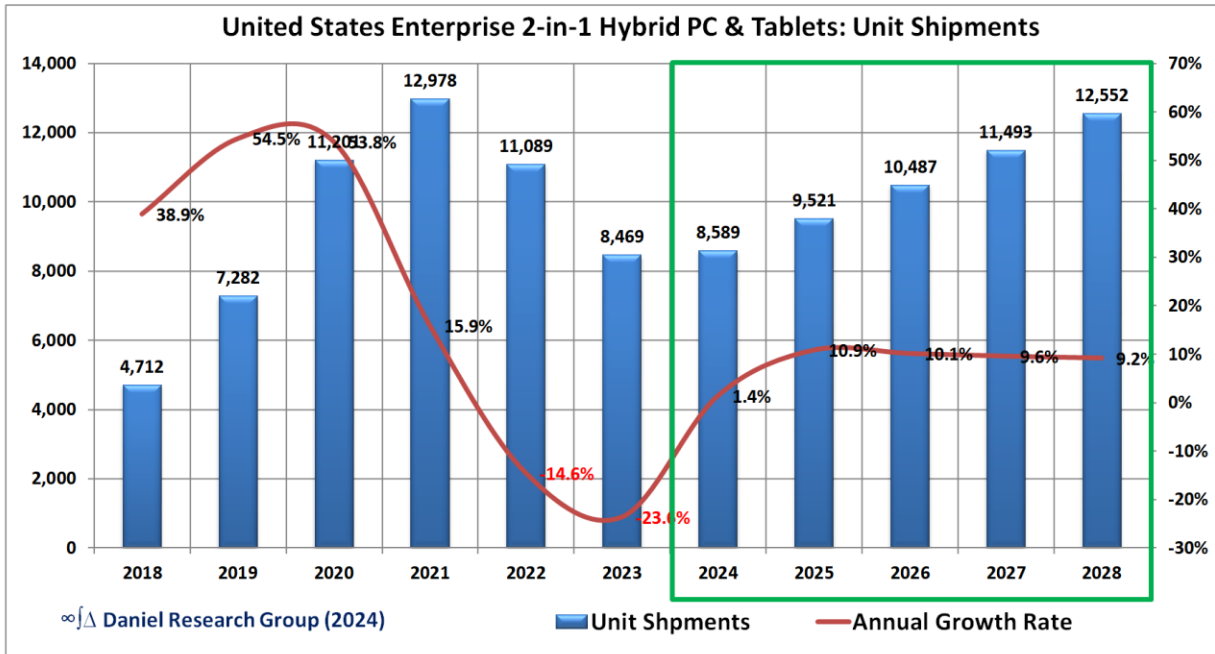
∞ ∫ Δ Daniel Research Group ©(2024)



# Enterprise

United States Enterprise 2-in-1 Hybrid PC & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	8,469	8,589	9,521	10,487	11,493	12,552	9.9%	
AGR	-23.6%	1.4%	10.9%	10.1%	9.6%	9.2%		
<b>Revenue (\$M)</b>	5,462	5,332	5,769	6,205	6,641	7,085	7.4%	
AGR	-26.5%	-2.4%	8.2%	7.5%	7.0%	6.7%		
<b>Average Price (\$)</b>	645	621	606	592	578	564	-2.4%	
AGR	-3.8%	-3.7%	-2.4%	-2.4%	-2.3%	-2.3%		
<b>Installed Base (K)</b>	18,095	21,079	24,045	26,418	29,204	31,758	10.8%	
AGR	21.3%	16.5%	14.1%	9.9%	10.5%	8.7%		
<b>Removal Age (Y)</b>	1.98	2.36	2.34	2.62	2.80	2.95	5.7%	
AGR	-0.2%	19.1%	-1.0%	12.0%	6.7%	5.4%		
<b>Average Installed Base Age (Y)</b>	2.91	3.13	3.38	3.58	3.70	3.79	4.9%	
AGR	9.2%	7.8%	7.9%	5.9%	3.4%	2.4%		
<b>Replacement Cycle Length (Y)</b>	4.42	4.76	4.67	4.26	4.35	4.18	-3.2%	
AGR	72.6%	7.8%	-1.9%	-8.8%	2.3%	-4.1%		
<b>Units per Businesses (#)</b>	3.97	3.94	4.04	4.15	4.40	4.67	4.4%	
AGR	-3.0%	-0.8%	2.7%	2.6%	6.1%	6.1%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	67.4%	77.6%	85.3%	90.7%	94.2%	96.5%	29.1%	

∞ ∫ Δ Daniel Research Group ©(2024)

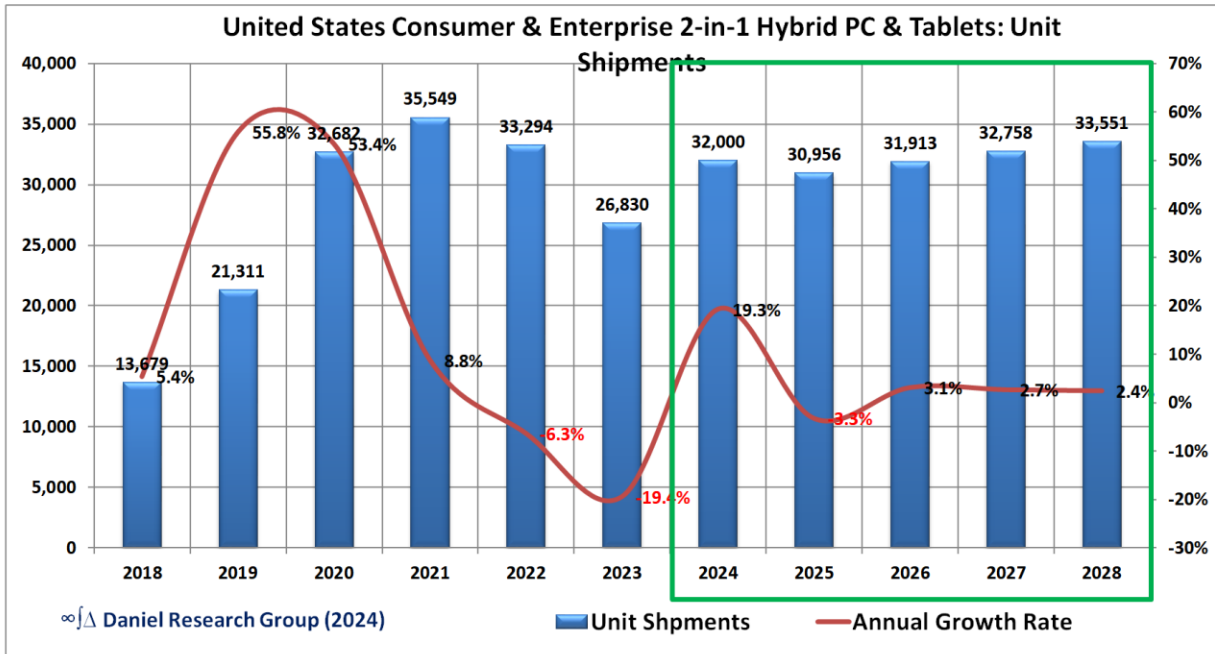




# Total Hybrids

United States Consumer & Enterprise 2-in-1 Hybrid PC & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	26,830	32,000	30,956	31,913	32,758	33,551	1.2%	
AGR	-19.4%	19.3%	-3.3%	3.1%	2.7%	2.4%		
<b>Revenue (\$M)</b>	17,940	21,192	20,251	20,640	20,928	21,154	0.0%	
AGR	-22.2%	18.1%	-4.4%	1.9%	1.4%	1.1%		
<b>Average Price (\$)</b>	669	662	654	647	639	630	-1.2%	
AGR	-3.5%	-1.0%	-1.2%	-1.1%	-1.2%	-1.3%		
<b>Installed Base (K)</b>	85,138	94,551	101,968	107,731	113,417	118,559	5.8%	
AGR	11.5%	11.1%	7.8%	5.7%	5.3%	4.5%		
<b>Removal Age (Y)</b>	2.70	2.85	3.24	3.35	3.60	3.96	8.6%	
AGR	30.3%	5.3%	13.8%	3.4%	7.6%	9.9%		
<b>Average Installed Base Age (Y)</b>	3.64	3.84	4.04	4.25	4.42	4.52	4.2%	
AGR	8.8%	5.4%	5.3%	5.3%	3.9%	2.2%		
<b>Replacement Cycle Length (Y)</b>	5.71	5.19	5.33	5.12	5.19	5.17	-0.1%	
AGR	31.5%	-9.2%	2.8%	-4.0%	1.4%	-0.3%		
<b>Units per Households &amp; Businesses (#)</b>	2.47	2.51	2.50	2.47	2.43	2.38	-1.3%	
AGR	0.8%	1.6%	-0.2%	-1.2%	-1.6%	-2.1%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	24.7%	26.7%	28.6%	30.3%	32.2%	34.1%	9.4%	

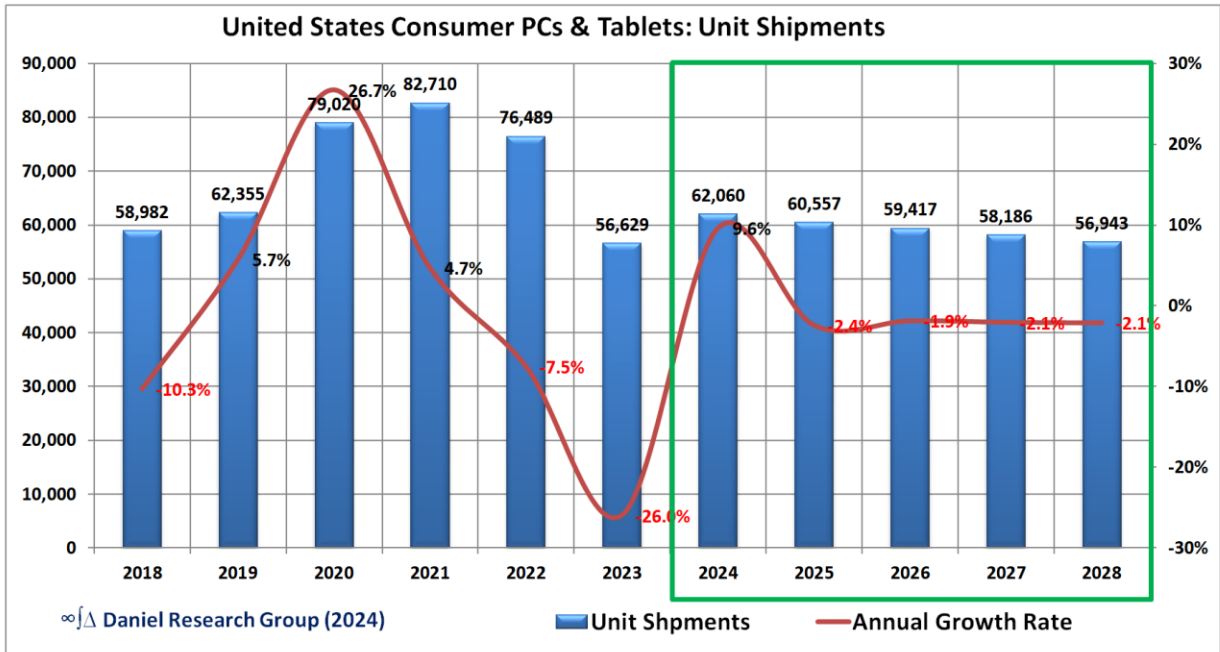
∞ ∫ Δ Daniel Research Group ©(2024)



# Total PCs and Tablets Consumer

United States Consumer PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	56,629	62,060	60,557	59,417	58,186	56,943	-2.1%	
AGR	-26.0%	9.6%	-2.4%	-1.9%	-2.1%	-2.1%		
<b>Revenue (\$M)</b>	44,534	50,538	51,392	53,142	55,034	57,140	3.1%	
AGR	-18.3%	13.5%	1.7%	3.4%	3.6%	3.8%		
<b>Average Price (\$)</b>	786	814	849	894	946	1,003	5.4%	
AGR	10.3%	3.6%	4.2%	5.4%	5.7%	6.1%		
<b>Installed Base (K)</b>	353,202	352,981	349,494	341,925	327,353	312,996	-3.0%	
AGR	-0.2%	-0.1%	-1.0%	-2.2%	-4.3%	-4.4%		
<b>Removal Age (Y)</b>	5.12	6.43	6.51	6.76	6.60	6.63	0.8%	
AGR	1.7%	25.7%	1.2%	3.9%	-2.4%	0.5%		
<b>Average Installed Base Age (Y)</b>	5.81	5.86	5.91	5.91	5.93	5.92	0.3%	
AGR	6.3%	0.8%	0.8%	0.0%	0.3%	-0.2%		
<b>Replacement Cycle Length (Y)</b>	7.16	6.67	6.46	6.10	5.50	5.39	-5.2%	
AGR	13.4%	-6.9%	-3.2%	-5.5%	-9.9%	-2.0%		
<b>Units per Households (#)</b>	2.68	2.65	2.60	2.51	2.38	2.26	-3.9%	
AGR	-1.7%	-1.3%	-2.0%	-3.2%	-5.2%	-5.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	99.0%	99.2%	99.3%	99.5%	99.6%	99.6%	0.6%	

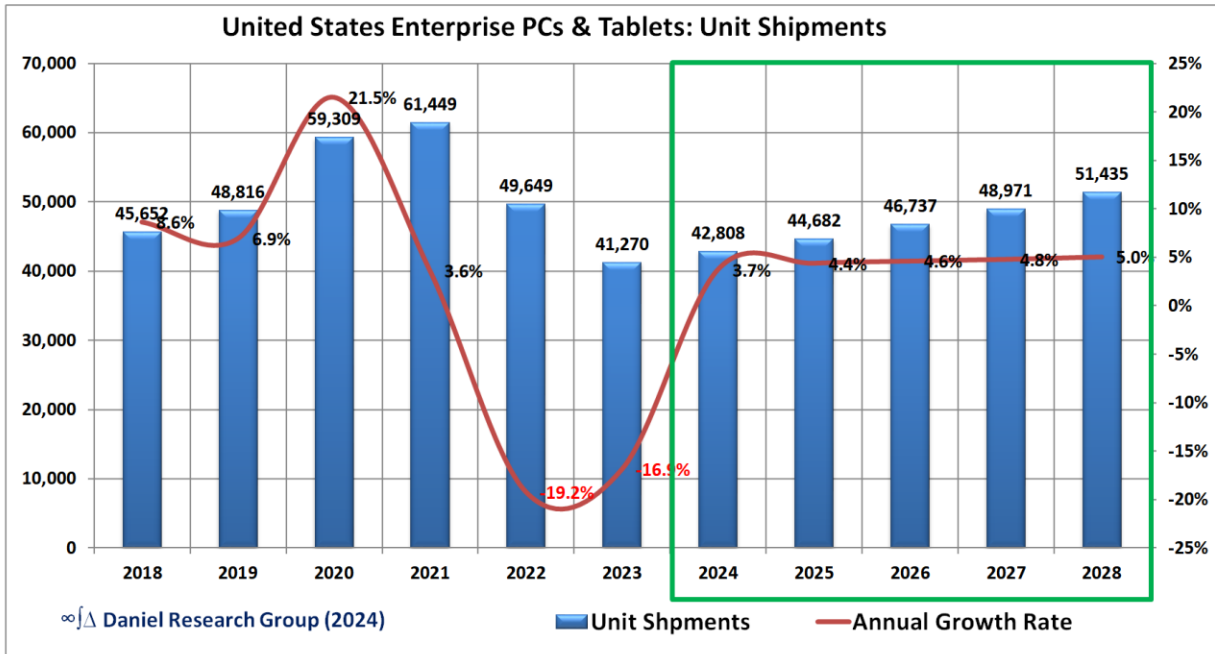
∞ Δ Daniel Research Group ©(2024)



# Enterprise

United States Enterprise PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	41,270	42,808	44,682	46,737	48,971	51,435	4.7%	
AGR	-16.9%	3.7%	4.4%	4.6%	4.8%	5.0%		
<b>Revenue (\$M)</b>	28,152	29,193	30,492	31,931	33,481	35,183	4.8%	
AGR	-21.4%	3.7%	4.5%	4.7%	4.9%	5.1%		
<b>Average Price (\$)</b>	682	682	682	683	684	684	0.1%	
AGR	-5.4%	0.0%	0.1%	0.1%	0.1%	0.0%		
<b>Installed Base (K)</b>	175,675	187,964	196,502	201,588	209,167	216,194	3.6%	
AGR	7.9%	7.0%	4.5%	2.6%	3.8%	3.4%		
<b>Removal Age (Y)</b>	3.83	4.13	5.48	6.51	5.42	5.16	5.7%	
AGR	1.6%	7.7%	32.8%	18.7%	-16.7%	-4.9%		
<b>Average Installed Base Age (Y)</b>	5.27	5.41	5.35	5.08	5.02	5.00	-2.0%	
AGR	3.3%	2.8%	-1.1%	-5.1%	-1.2%	-0.3%		
<b>Replacement Cycle Length (Y)</b>	7.18	7.16	6.44	5.84	6.05	5.87	-4.8%	
AGR	65.9%	-0.3%	-10.1%	-9.3%	3.7%	-3.1%		
<b>Units per Businesses (#)</b>	25.98	27.25	28.20	28.71	29.70	30.68	3.0%	
AGR	5.3%	4.9%	3.5%	1.8%	3.4%	3.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	

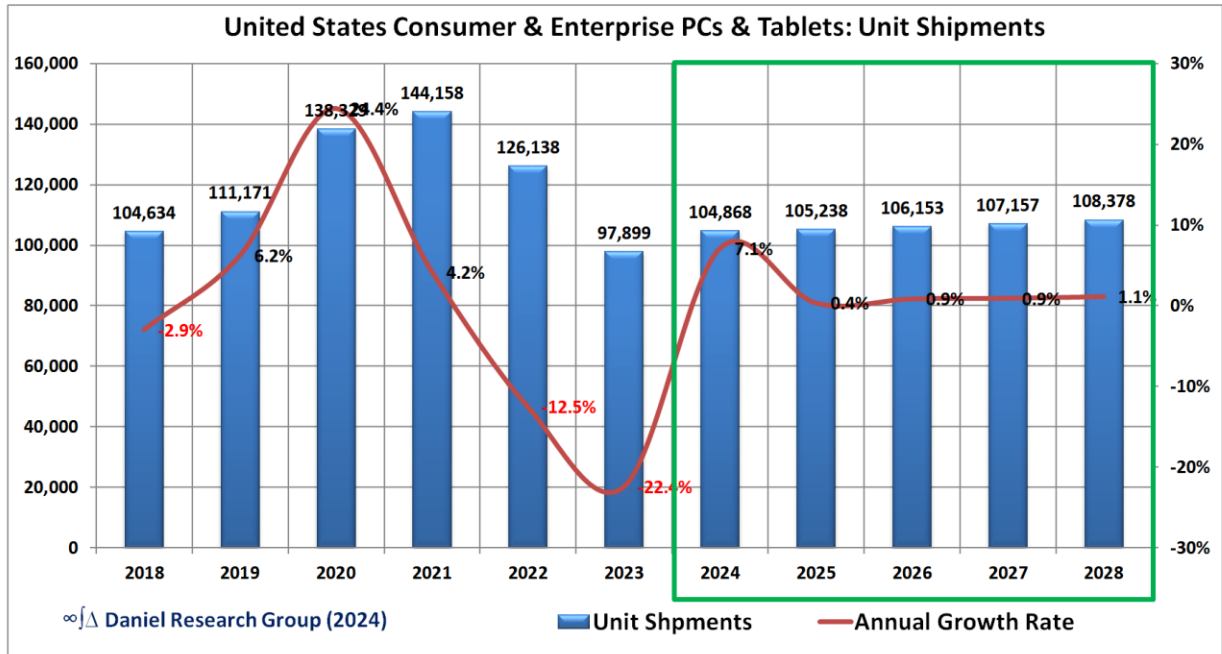
∞ ∫ Δ Daniel Research Group ©(2024)



## Total PCs and Tablets

United States Consumer & Enterprise PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	97,899	104,868	105,238	106,153	107,157	108,378	0.8%	
AGR	-22.4%	7.1%	0.4%	0.9%	0.9%	1.1%		
<b>Revenue (\$M)</b>	72,686	79,731	81,884	85,073	88,515	92,323	3.7%	
AGR	-19.5%	9.7%	2.7%	3.9%	4.0%	4.3%		
<b>Average Price (\$)</b>	742	760	778	801	826	852	2.9%	
AGR	3.7%	2.4%	2.3%	3.0%	3.1%	3.1%		
<b>Installed Base (K)</b>	528,878	540,945	545,996	543,513	536,520	529,189	-0.5%	
AGR	2.4%	2.3%	0.9%	-0.5%	-1.3%	-1.4%		
<b>Removal Age (Y)</b>	4.67	5.85	6.12	6.19	7.57	5.91	0.3%	
AGR	-8.9%	25.1%	4.7%	1.1%	22.3%	-21.9%		
<b>Average Installed Base Age (Y)</b>	5.65	5.69	5.70	5.69	5.37	5.37	-1.5%	
AGR	5.2%	0.8%	0.1%	-0.2%	-5.7%	0.0%		
<b>Replacement Cycle Length (Y)</b>	7.17	6.83	6.45	6.00	5.70	5.57	-5.0%	
AGR	31.0%	-4.7%	-5.6%	-6.9%	-5.0%	-2.2%		
<b>Units per Households &amp; Businesses (#)</b>	3.82	3.86	3.86	3.80	3.71	3.63	-1.5%	
AGR	0.7%	1.0%	-0.1%	-1.5%	-2.2%	-2.3%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	99.1%	99.2%	99.4%	99.5%	99.6%	99.7%	0.6%	

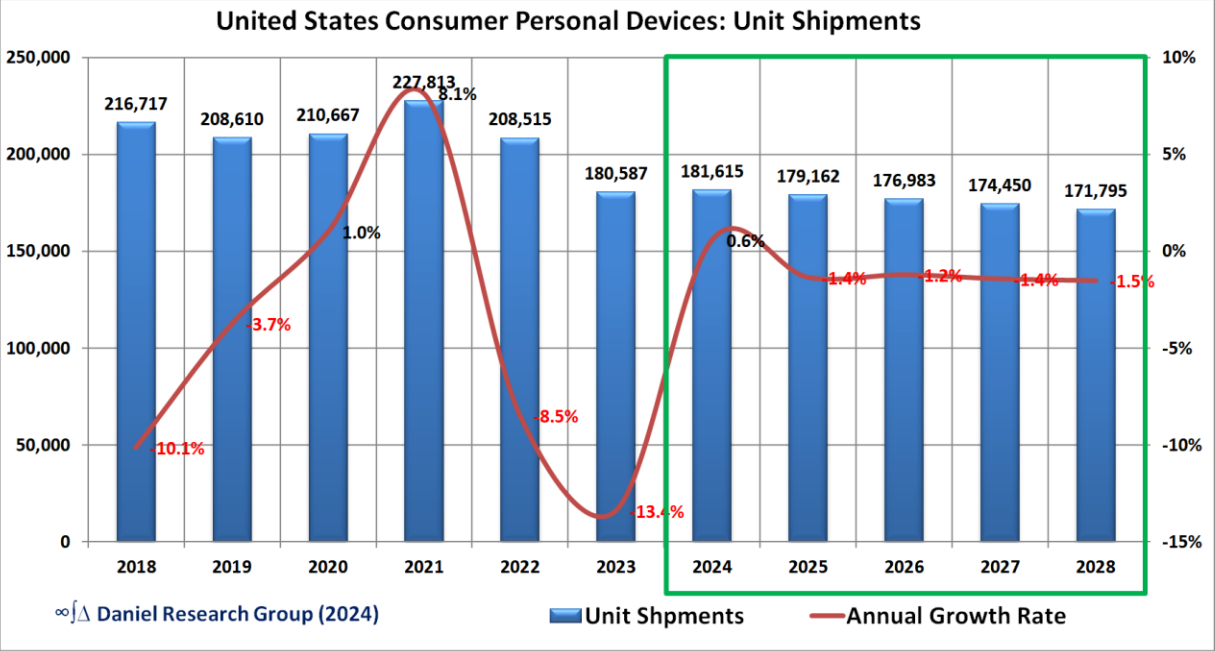
∞ ∫ Δ Daniel Research Group ©(2024)



## Total Personal Devices Consumer

United States Consumer Personal Devices								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	180,587	181,615	179,162	176,983	174,450	171,795	-1.4%	
AGR	-13.4%	0.6%	-1.4%	-1.2%	-1.4%	-1.5%		
<b>Revenue (\$M)</b>	141,954	146,016	147,002	148,806	150,525	152,355	1.1%	
AGR	-3.8%	2.9%	0.7%	1.2%	1.2%	1.2%		
<b>Average Price (\$)</b>	786	804	821	841	863	887	2.5%	
AGR	11.1%	2.3%	2.1%	2.5%	2.6%	2.8%		
<b>Installed Base (K)</b>	699,995	685,425	666,413	646,583	621,353	591,701	-3.6%	
AGR	-1.5%	-2.1%	-2.8%	-3.0%	-3.9%	-4.8%		
<b>Removal Age (Y)</b>	4.00	4.88	4.79	4.86	5.49	4.64	-1.3%	
AGR	-12.9%	21.9%	-1.9%	1.5%	12.9%	-15.5%		
<b>Average Installed Base Age (Y)</b>	4.84	4.83	4.84	4.82	4.57	4.56	-1.4%	
AGR	5.4%	-0.2%	0.2%	-0.5%	-5.1%	-0.2%		
<b>Replacement Cycle Length (Y)</b>	4.66	4.49	4.36	4.29	4.11	3.94	-3.3%	
AGR	18.2%	-3.7%	-2.9%	-1.8%	-4.0%	-4.2%		
<b>Units per Households (#)</b>	5.27	5.11	4.92	4.73	4.50	4.25	-4.5%	
AGR	-2.8%	-3.1%	-3.7%	-3.9%	-4.8%	-5.6%		
<b>Market Penetration (%)</b>	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%	Change '20-'25	Trend
							0.1%	

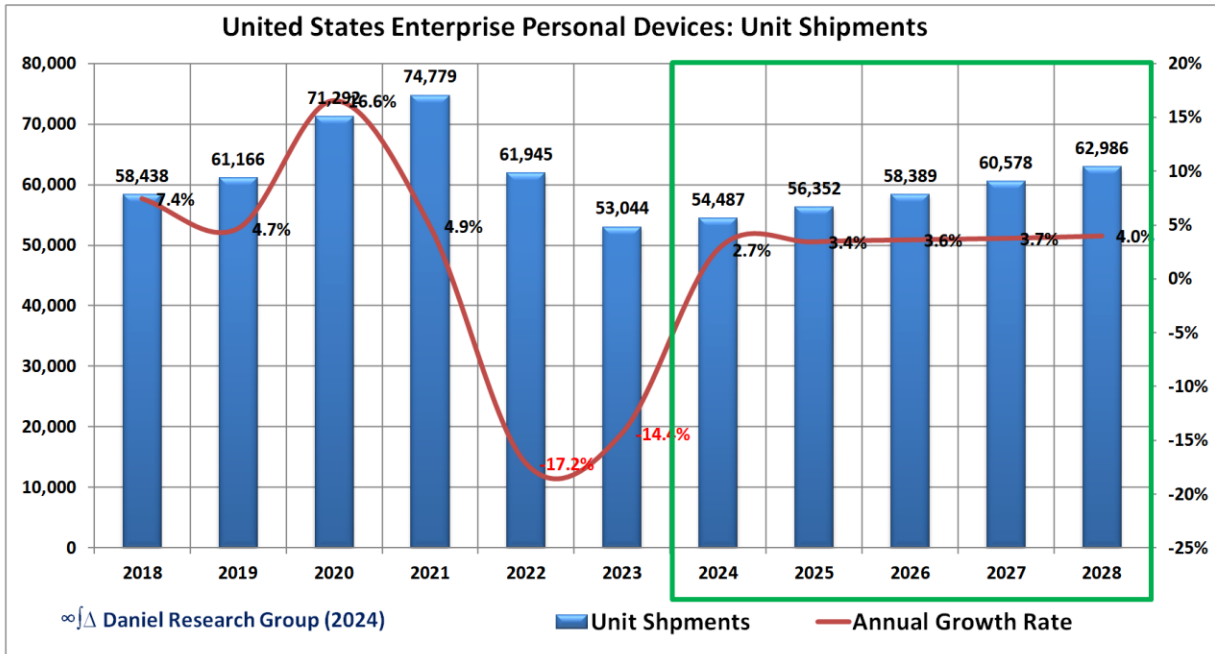
∞∫Δ Daniel Research Group ©(2024)



# Enterprise

United States Enterprise Personal Devices								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	53,044	54,487	56,352	58,389	60,578	62,986	3.7%	
AGR	-14.4%	2.7%	3.4%	3.6%	3.7%	4.0%		
<b>Revenue (\$M)</b>	38,929	40,168	41,734	43,435	45,228	47,165	4.1%	
AGR	-15.3%	3.2%	3.9%	4.1%	4.1%	4.3%		
<b>Average Price (\$)</b>	734	737	741	744	747	749	0.4%	
AGR	-1.1%	0.5%	0.5%	0.4%	0.4%	0.3%		
<b>Installed Base (K)</b>	193,140	203,565	211,119	215,601	222,753	229,452	3.0%	
AGR	4.3%	5.4%	3.7%	2.1%	3.3%	3.0%		
<b>Removal Age (Y)</b>	3.30	3.59	4.85	4.52	4.71	5.49	11.2%	
AGR	-26.5%	8.7%	35.2%	-6.9%	4.3%	16.6%		
<b>Average Installed Base Age (Y)</b>	4.84	5.03	4.96	4.98	4.93	4.69	-1.8%	
AGR	6.0%	4.0%	-1.4%	0.4%	-1.0%	-5.0%		
<b>Replacement Cycle Length (Y)</b>	5.28	5.62	5.33	5.00	5.17	5.08	-2.5%	
AGR	32.6%	6.5%	-5.2%	-6.1%	3.4%	-1.8%		
<b>Units per Businesses (#)</b>	28.59	29.52	30.31	30.72	31.63	32.56	2.5%	
AGR	1.7%	3.3%	2.6%	1.4%	3.0%	2.9%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%	0.1%	

∞ ∫ Δ Daniel Research Group ©(2024)



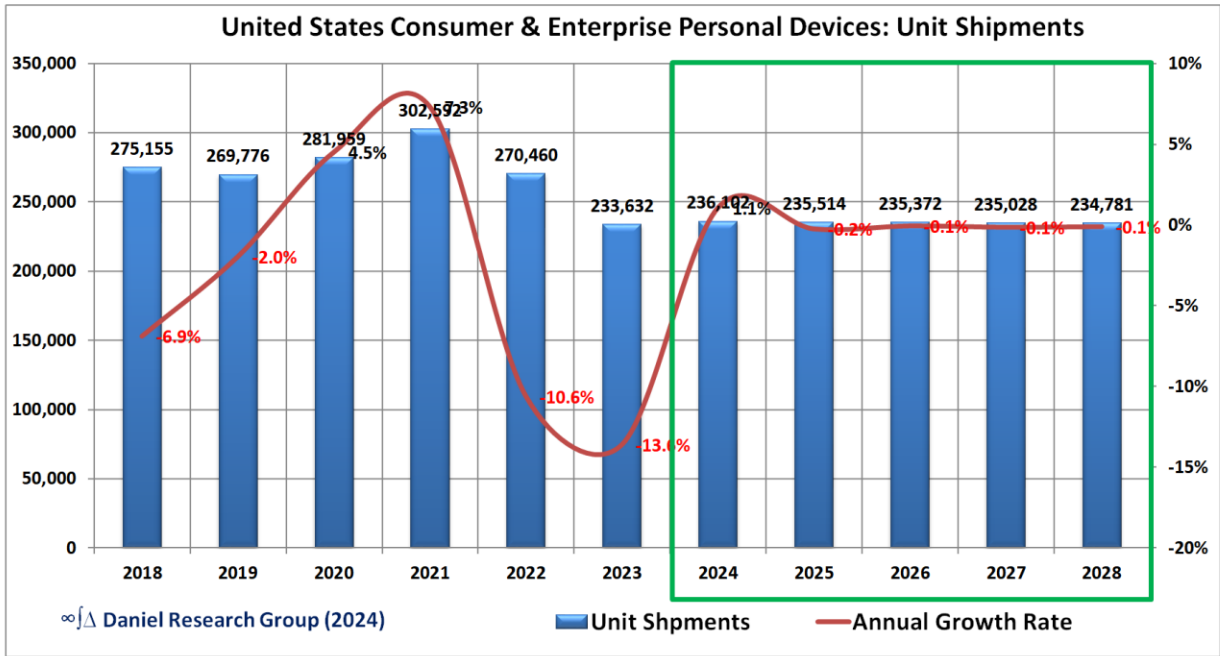
∞ ∫ Δ Daniel Research Group (2024)

■ Unit Shpments — Annual Growth Rate

# Total Personal Devices

United States Consumer & Enterprise Personal Devices								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	233,632	236,102	235,514	235,372	235,028	234,781	-0.1%	
AGR	-13.6%	1.1%	-0.2%	-0.1%	-0.1%	-0.1%		
<b>Revenue (\$M)</b>	180,883	186,184	188,736	192,241	195,754	199,520	1.7%	
AGR	-6.5%	2.9%	1.4%	1.9%	1.8%	1.9%		
<b>Average Price (\$)</b>	774	789	801	817	833	850	1.9%	
AGR	8.2%	1.9%	1.6%	1.9%	2.0%	2.0%		
<b>Installed Base (K)</b>	893,135	888,991	877,532	862,185	844,105	821,153	-2.0%	
AGR	-0.3%	-0.5%	-1.3%	-1.7%	-2.1%	-2.7%		
<b>Removal Age (Y)</b>	3.84	4.88	4.73	4.81	4.69	4.69	-1.0%	
AGR	-16.6%	26.9%	-3.0%	1.6%	-2.4%	-0.1%		
<b>Average Installed Base Age (Y)</b>	4.87	4.84	4.86	4.83	4.83	4.81	-0.2%	
AGR	5.7%	-0.5%	0.3%	-0.4%	-0.1%	-0.5%		
<b>Replacement Cycle Length (Y)</b>	4.78	4.70	4.55	4.44	4.33	4.19	-2.9%	
AGR	21.0%	-1.7%	-3.1%	-2.5%	-2.3%	-3.4%		
<b>Units per Households &amp; Businesses (#)</b>	6.40	6.30	6.16	6.00	5.82	5.62	-2.8%	
AGR	-1.7%	-1.5%	-2.2%	-2.7%	-2.9%	-3.5%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%	0.1%	

∞ ∫ Δ Daniel Research Group ©(2024)



# Market Model Variables

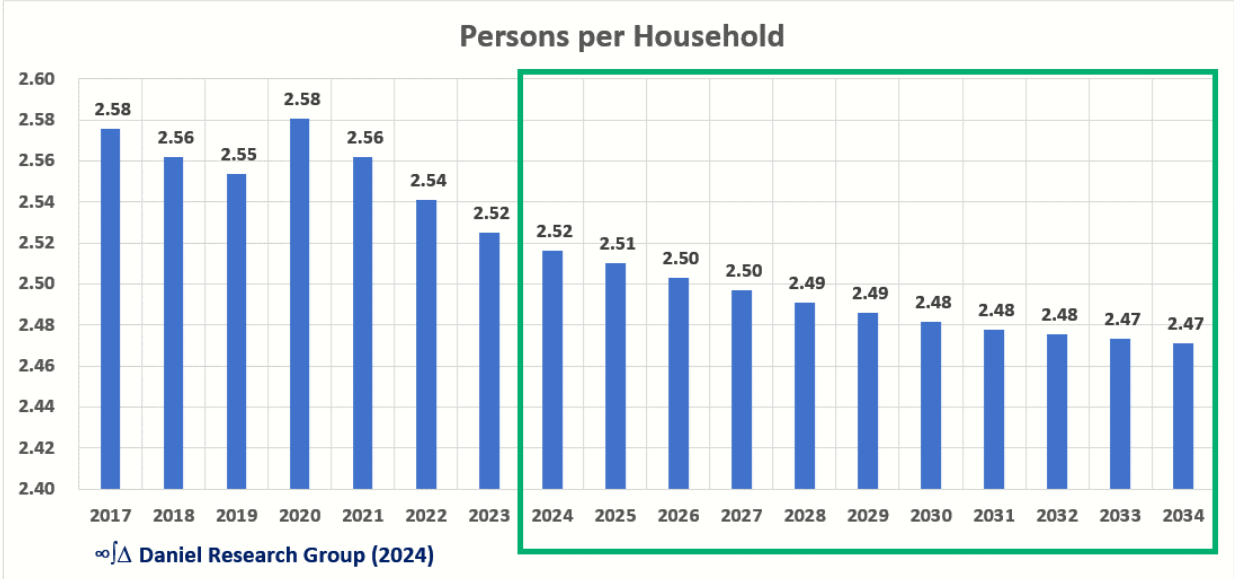
The market for almost any product or service can be defined in terms of six variables;

1. Total Available Market
2. Penetration
3. Density
4. Replacement Cycle Length
5. Unit Shipments
6. Installed Base

The **DRG** EquilibriumSolver (**EQS**) algorithm expresses these variables such that each of the six variables can be computed from the other five. The resulting model is **direction agnostic** facilitating the development of forecast scenarios that are consistent with historical trends while reflecting current and future exogenous market and economic events.

## Total Available Market (TAM)

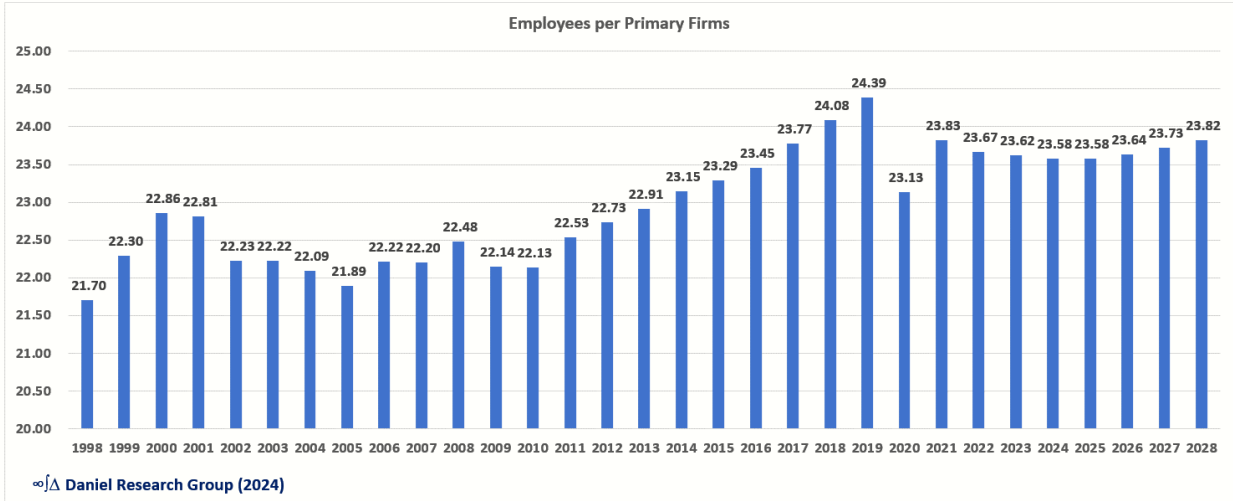
**Consumer Households:** The historic and forecast data was obtained from the United States Census Bureau and the Congressional Budget Office and projected to 2034.



The long-term trend of slowly decreasing household size temporarily reverse2 during economic disruption as in 2011 and 2020.

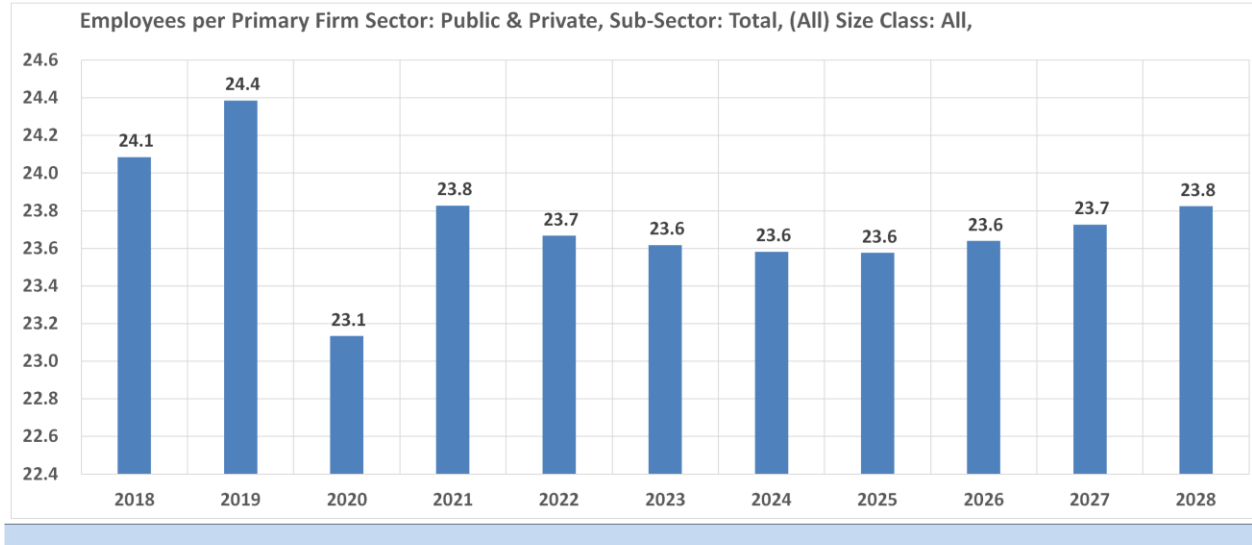
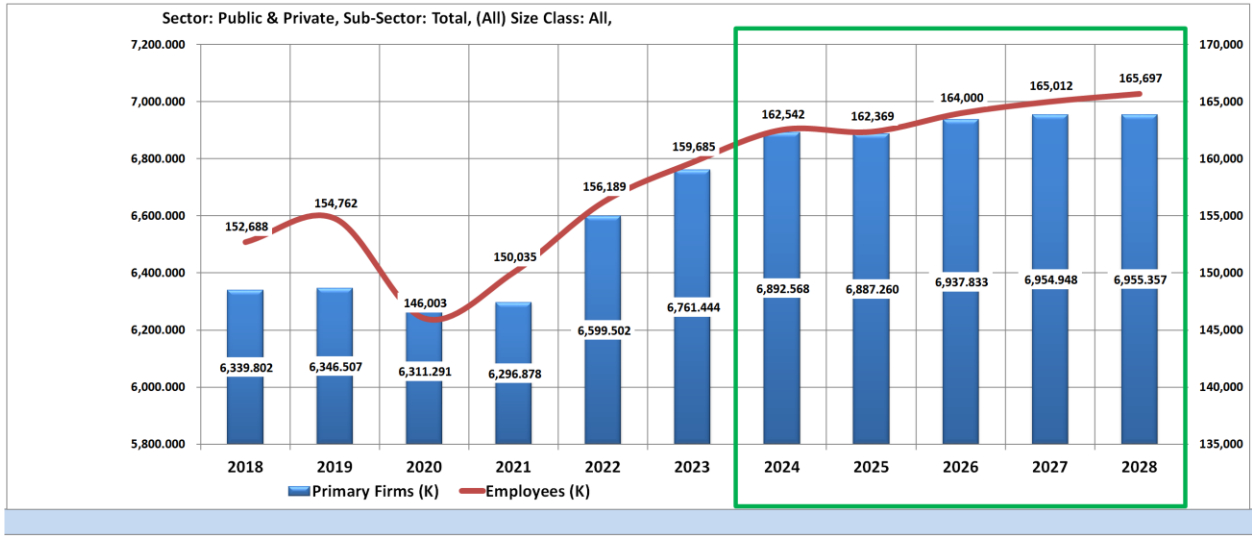
**Enterprise Businesses:** Historic data obtained from the US Census Bureau Statistics of the United States Businesses (SUSB) database.



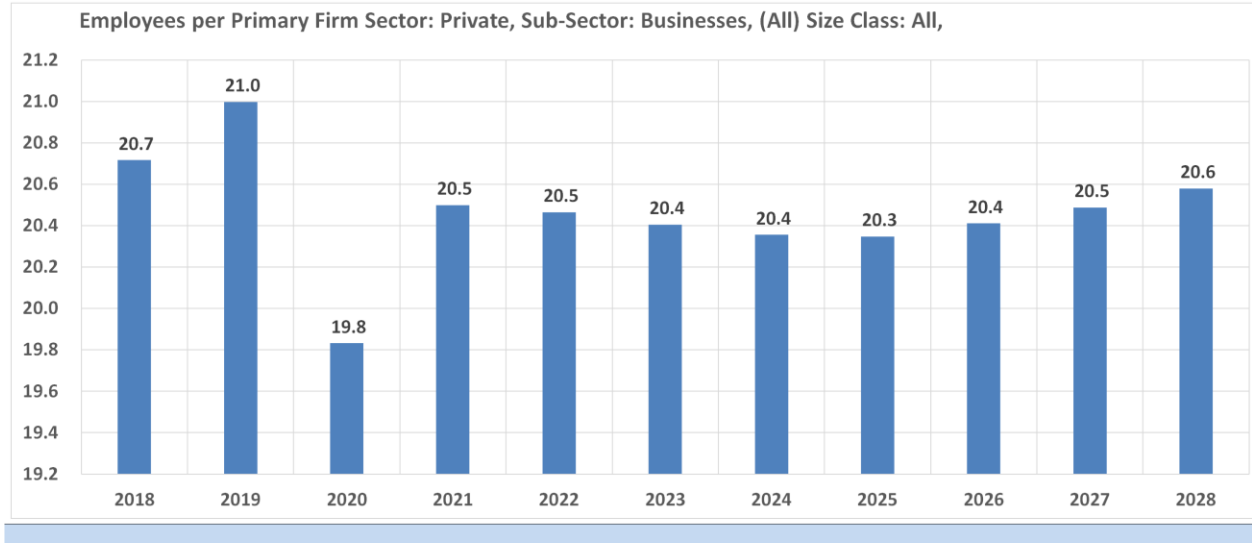
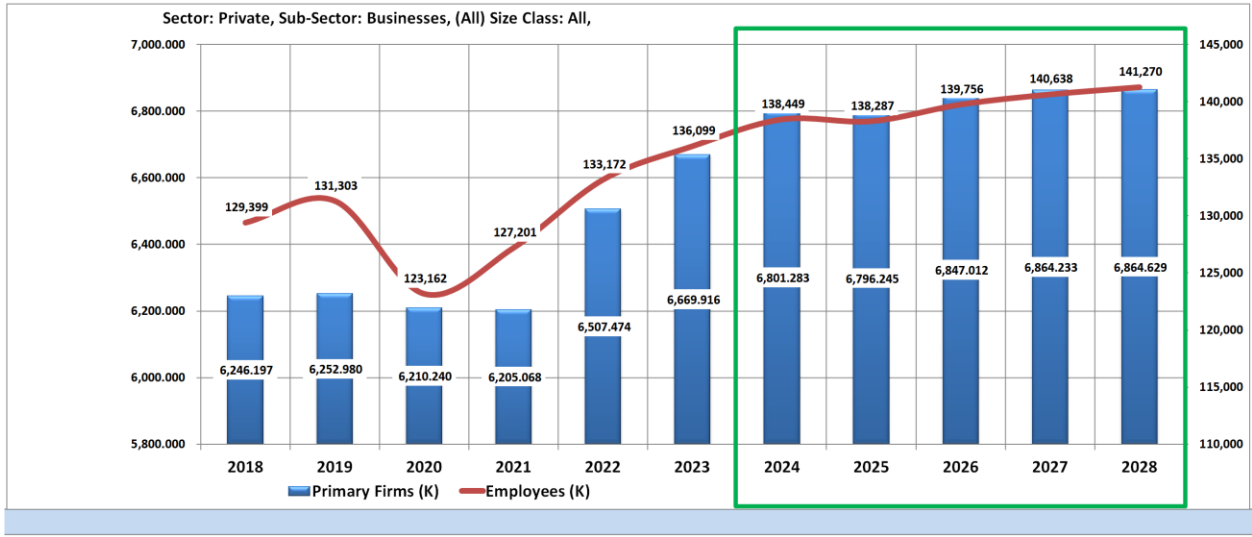


The long-term trend of increasing business size was disrupted by the pandemics. **DRGs Business Economic Demographic Database (BEDD)** forecast models predicted that the average size of business will start to increase again in 2025. The TAM used in the Enterprise Models is **Primary Firms** as computed in the **DRG BEDD** model that incorporates data from the US Census Bureau, Bureau of Labor Statistics, Bureau of Economic Analysis, The Congressional Budget Office, the Department of Defense, and other public and private sources.

**Total Public and Private Sectors**



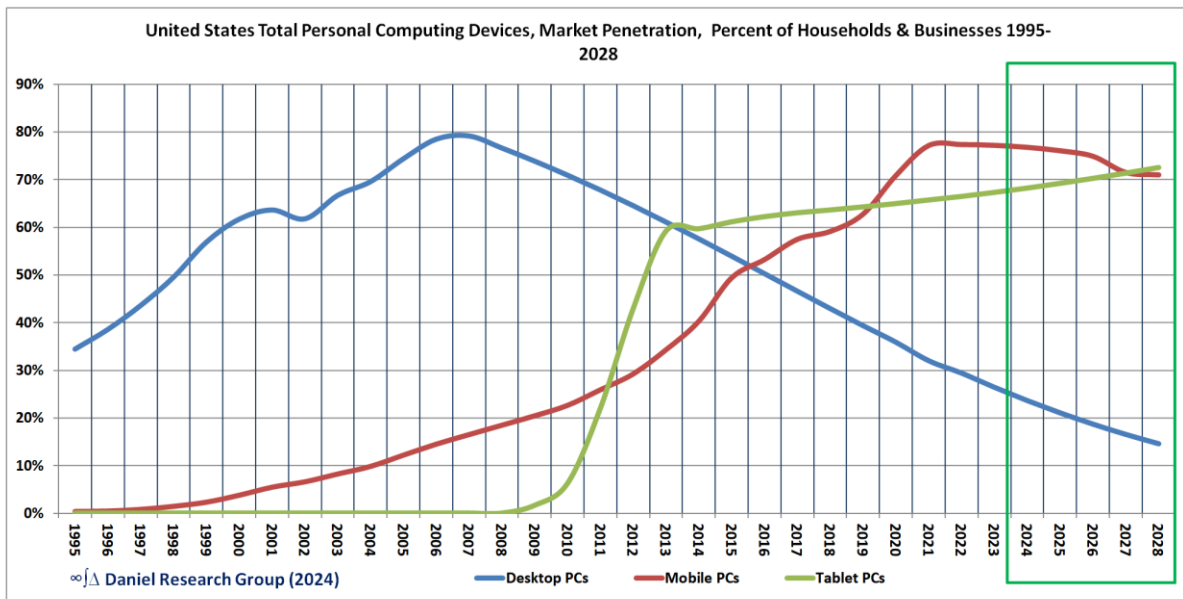
## Private Sector Only



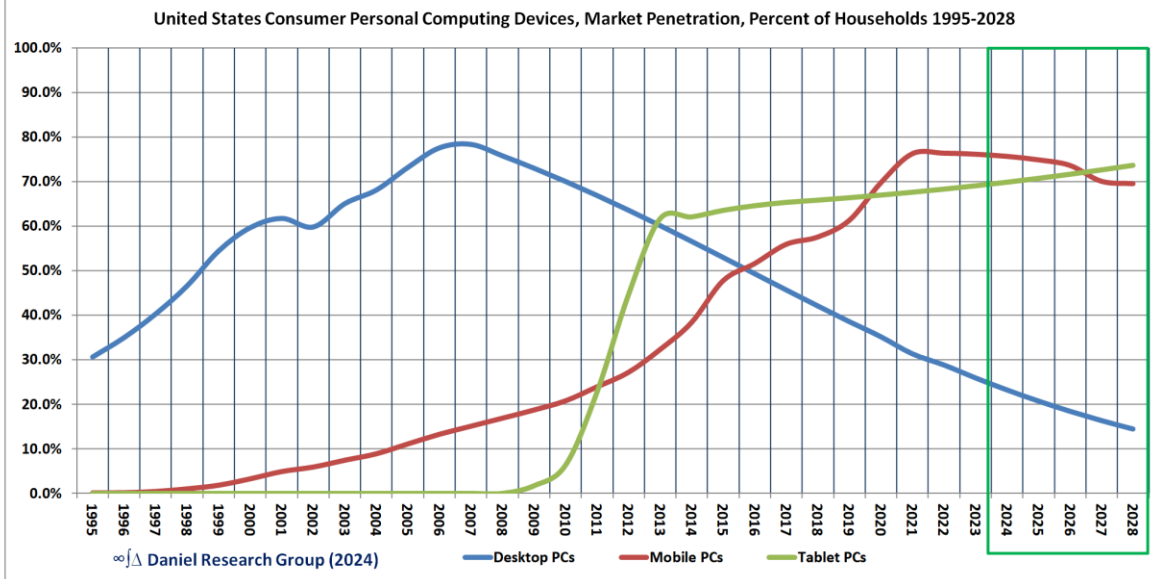
## Penetration

Theoretically, penetration rates should follow the Diffusion of Innovation S-Shaped curve. However, in most cases there are deviations where the actual curve accelerates, flattens, or even declines from its expected path, sometimes even returning to the expected path later. There are several reasons for this such as an economic shock, or an incorrect assumption as to the size of the TAM. More often, the S-shaped penetration parameters change because of changes in user/buyer preferences due to new product introduction, upgrades, or emerging use-cases.

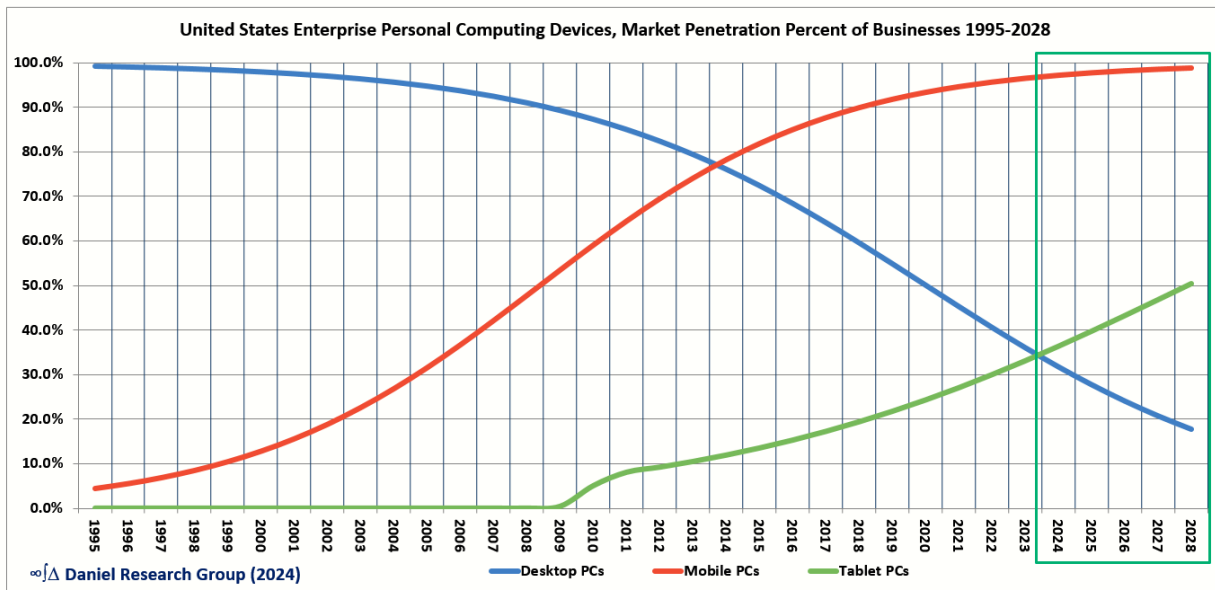
## Total PCs and Tablets



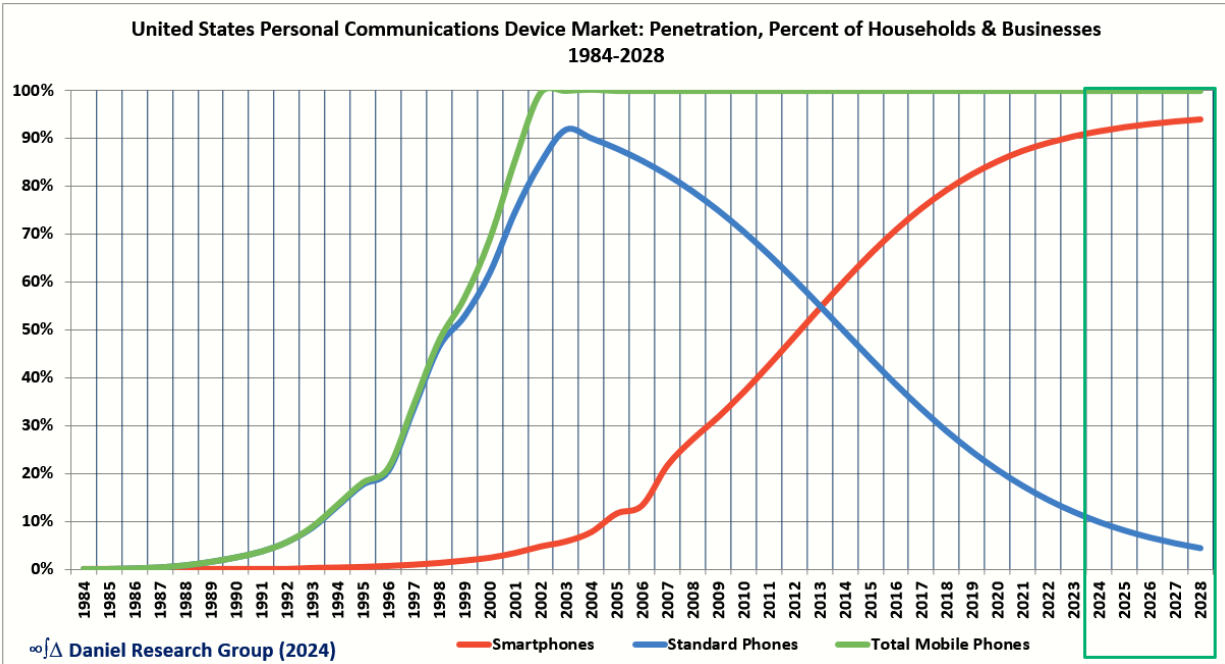
## Consumer PCs and Tablets



## Enterprise PCs and Tablets



# Mobile Phones

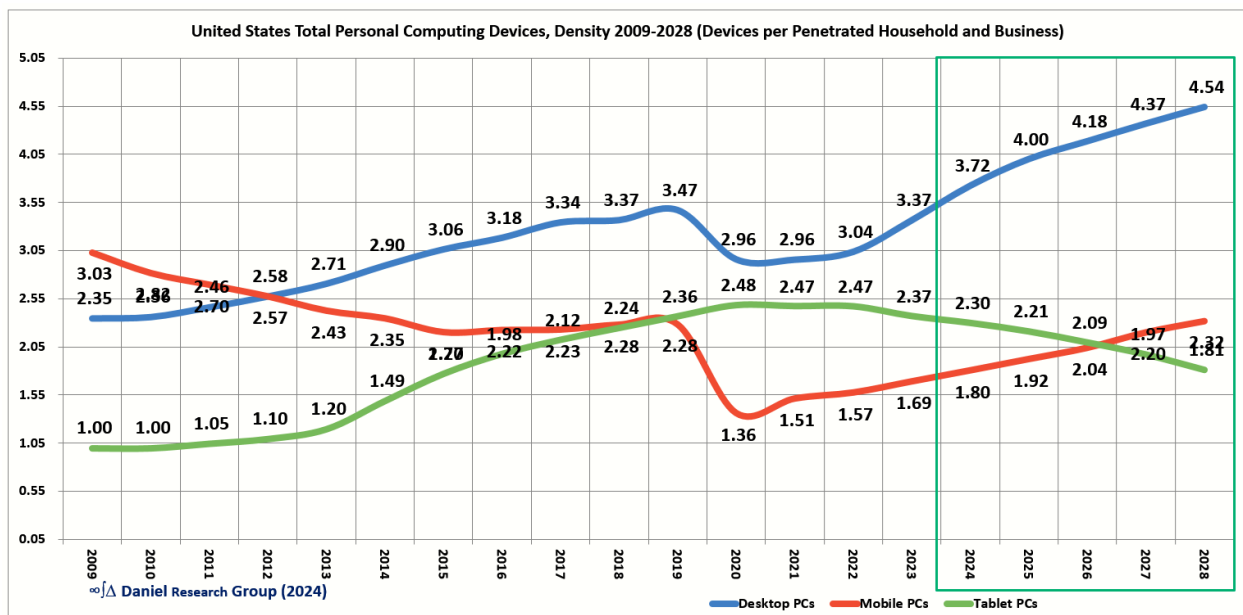


## Density

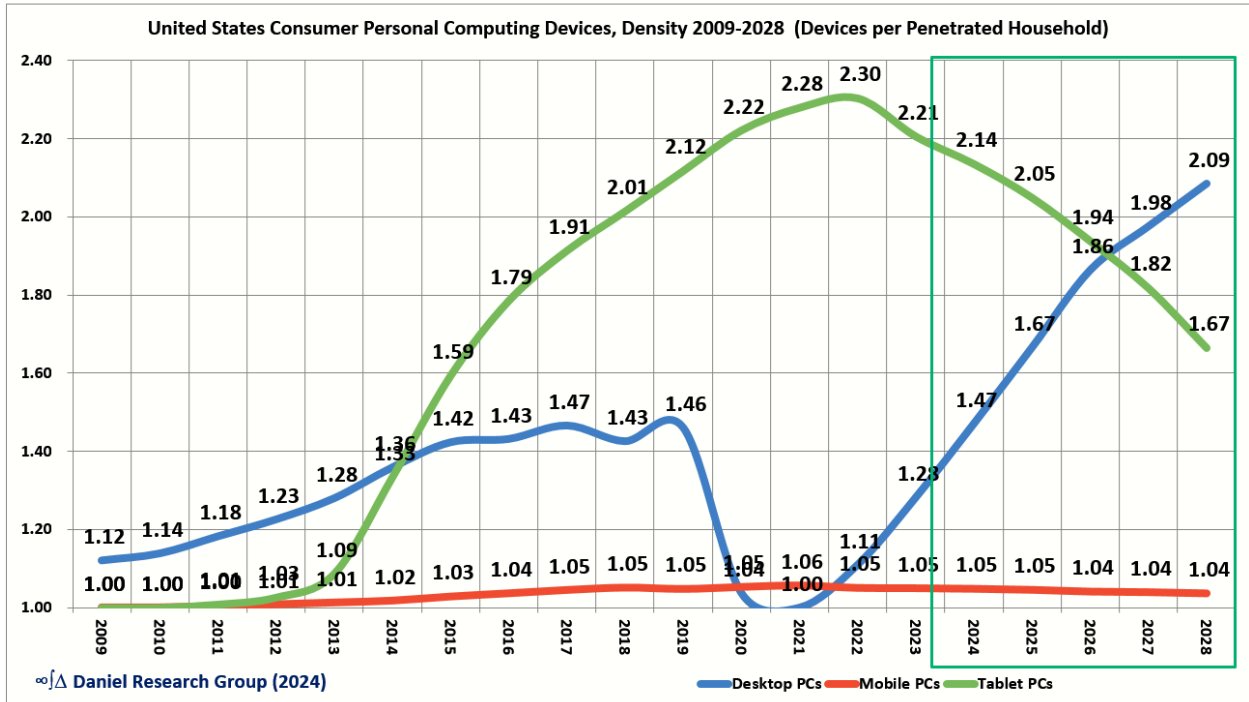
Density is the average number of Installed Base units in penetrated households and/or businesses. Densities are independent of penetration and reflect the distribution of single or multiple product users over the life of the product and the timing of the purchase of additional units. For most products, early adopters are more likely to be multiple unit buyers than later adopters. As the product enters the middle phase of its market life, the density will begin to decrease. For some products the density will start to increase again at the very end of the product life as the few remaining users are more likely to be multiple unit users than those who have stopped using the product.

The significant increase densities for Mobile PCs reflects the excess buying in the Consumer Segments to support pandemic caused increase in Work From Home, Learn From Home and home entertainment use cases. The significant increase in desktop density in the Enterprise Segment in the forecast period is reflective of the need to provision employees shifting back to on-site workplace work or hybrid working arrangements, as well as an increase in use cases that require the power off desktops.

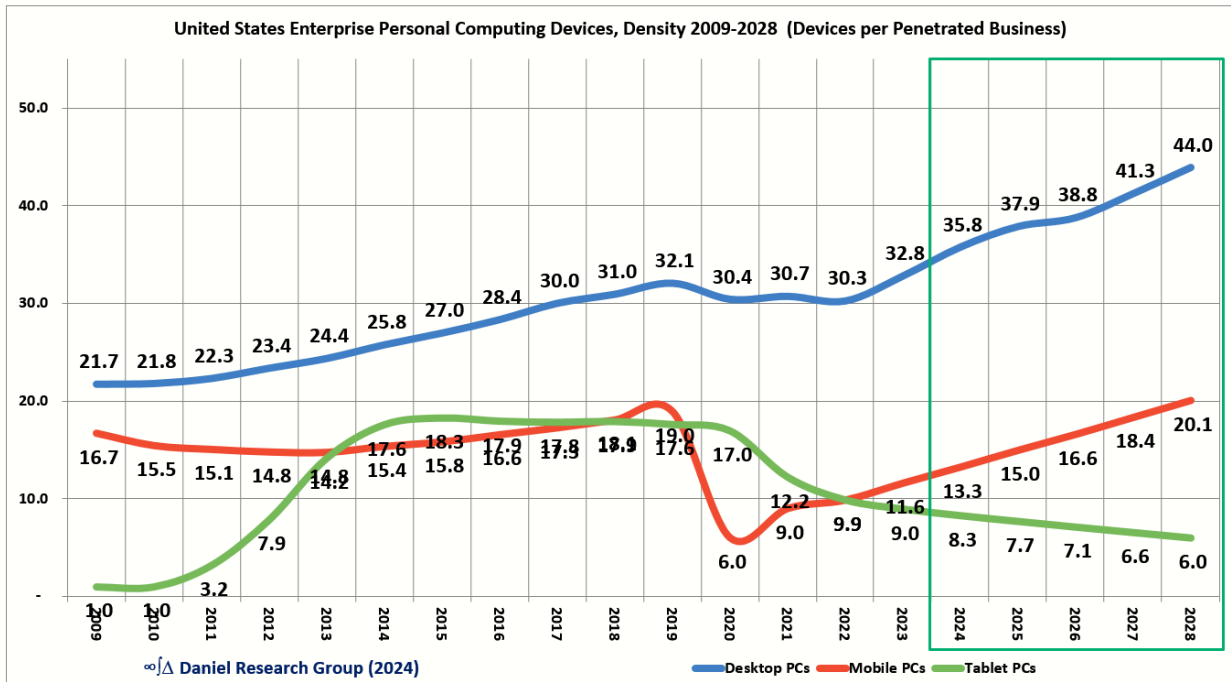
## Total



# Consumer

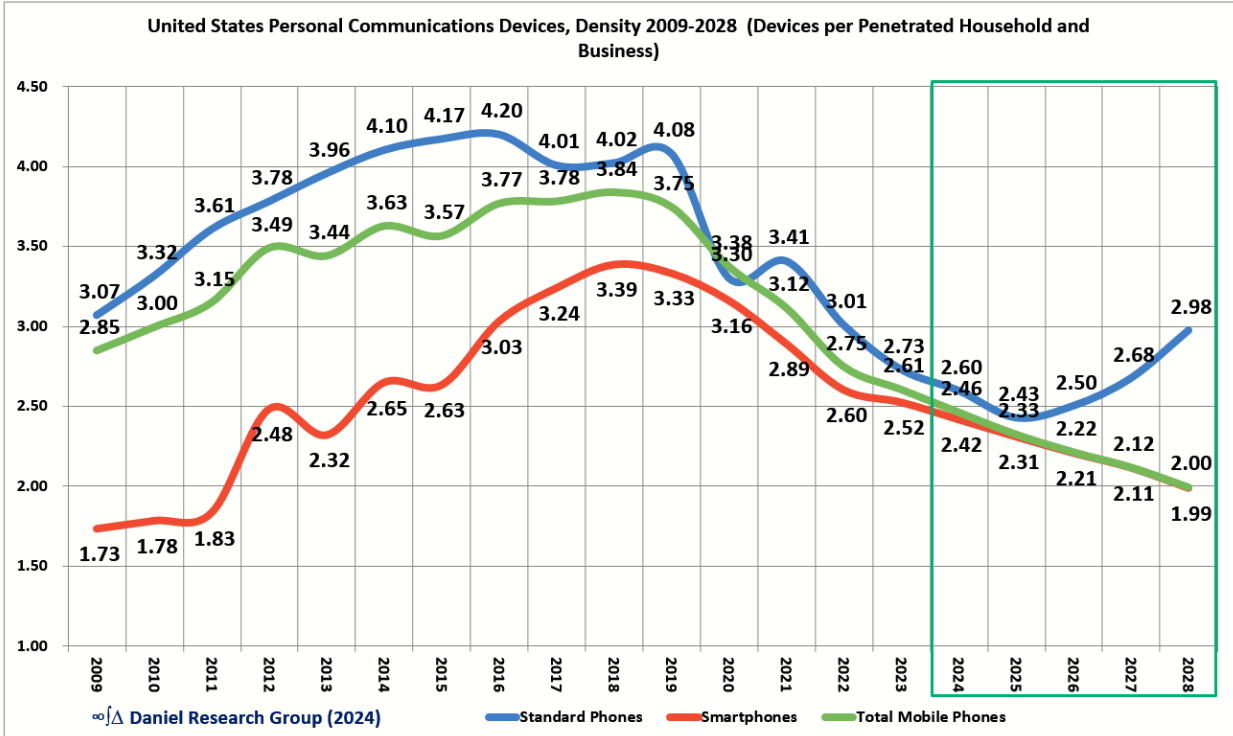


# Enterprise



# Mobile Phones





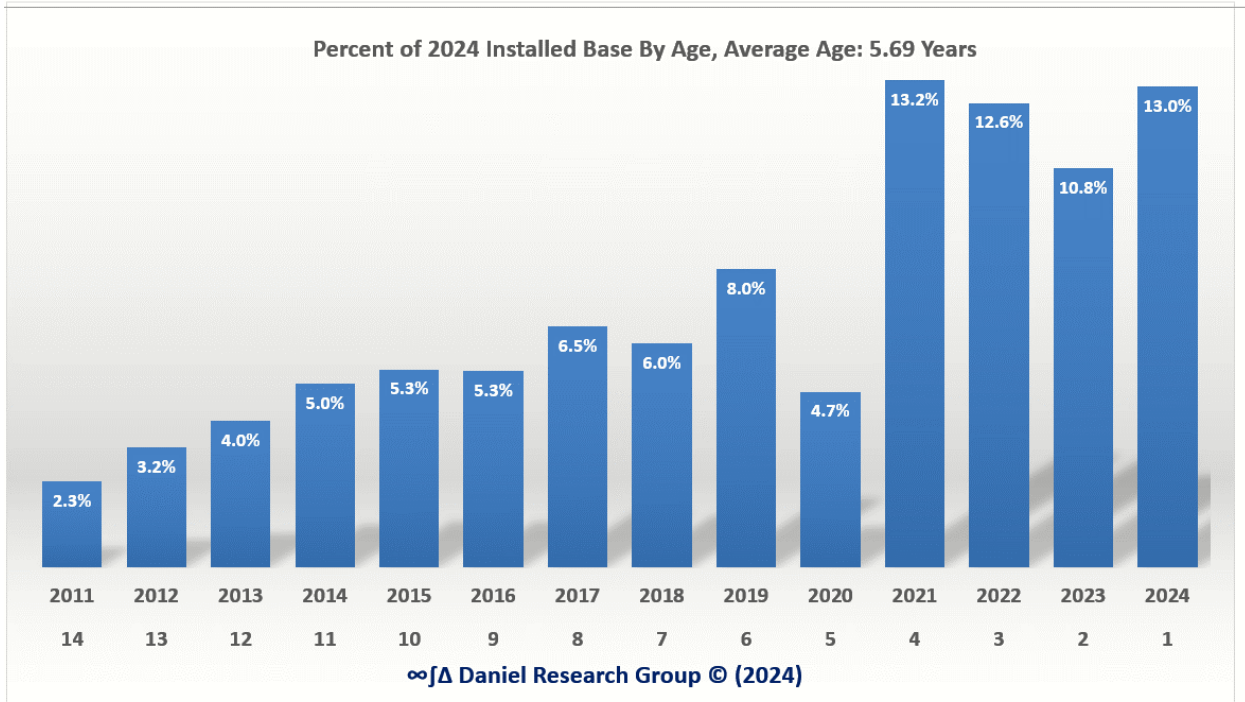
## Replacement Rates

How long are current users expected to continue to use their current device until they replace them? That is one of the most important questions that device vendors and sellers need to ask, and is very difficult to answer. Asking current users when they expect to replace requires them to have knowledge of future product, economic and market conditions that they may not know. The **EQS** methodology and models utilize four different metrics to measure historical and forecasted length of time a device is in use before being removed from the Installed Base.

**Retention Rate Distribution Mean (RRD- $\mu$ )**, Standard Deviation and Maximum Life. Given the number of Units Shipped in any year, the RRD- $\mu$  is the number of years from the current year when 50% of those Units will still be in the Installed Base. The distribution is assumed to be a left (1) and right (Maximum Life) truncated normal distribution with a specified standard deviation. The RRD parameters are usually inputs to the model and are based on our analysis of economic, market, and user behavior factors. However, the RRD- $\mu$  may be either an input or an output of the forecast model depending on the directional configuration. When constructing a model for the first time, the RRD parameters are solved for by **EQS** based on known historical Unit Shipments and Installed Base data. This provides the historical context for constructing and then validating RRD forecasts, as well as providing an historical baseline to validate the forecasts.

**Average Installed Base Age (AIBA)**. The **EQS** models compute the age distribution of the Installed Base in every year. However, AIBA is often highly dependent on the relative magnitude of current Unit Shipments in relationship to the Installed Base, and is therefore may not be an accurate estimate of how long users will continue to use the device when either Unit Shipments or Removals exhibit high year to year variance.

## Total PCs and Tablets



The **EQS** Models compute and output the age distribution of the Installed Base for every historical and forecasted year. The demand for After Market/Reverse Logistics products and services are more a function of the Installed Base than the initial Unit Shipments.

### Replacement Cycle Length (RCL)

$$RCL = \frac{\text{Starting Installed Base} + \text{Unit Shipments}}{\text{Units Exiting the Installed Base}}$$

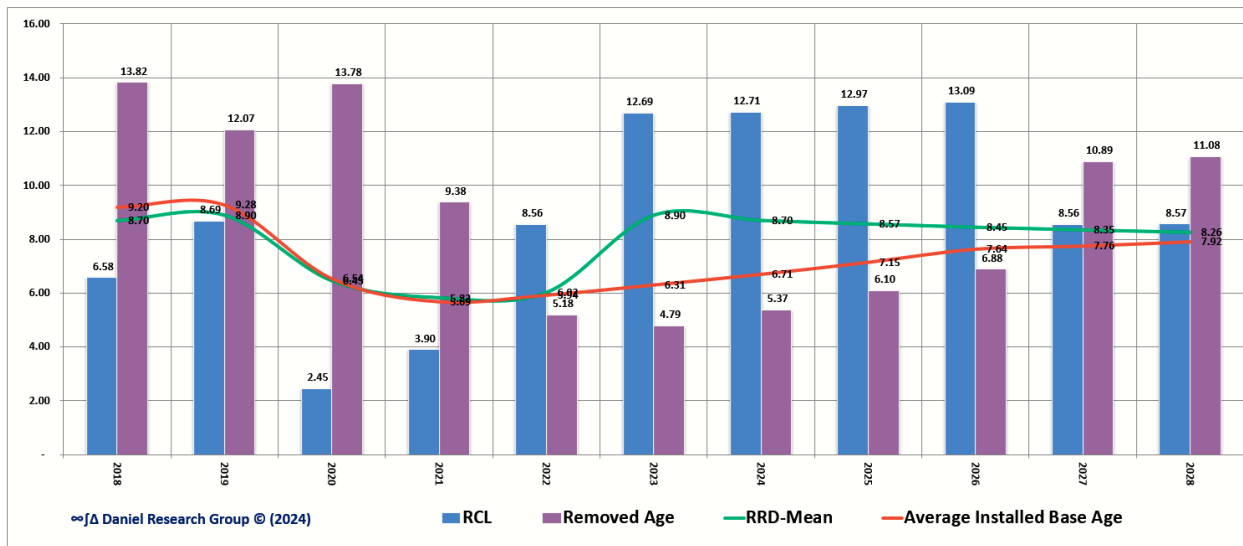
RCL is the length of time it will take for all the existing units in the Installed Base to be replaced given the current Installed Base size, Unit Shipments, and number of Units Removed from the Installed Base in that year. The **EQS** algorithm allows the RRD- $\mu$  to be adjusted to produce a target RCL value. Therefore, the models may be configured to use RCL as either an input or an output variable.

Under normal conditions, RCL is the favored metric for predicting the length of use/ownership trends of Personal Devices. However, like the AIBA metric, its predictive properties diminish when the variance of the Unit Shipments or Removed Units exiting the Installed Base increases. In 2020 and 2021, RCL will show considerable variance in the Enterprise Segment due to the significant number of Units exiting the Installed Base as a result of business closures in 2020 and recovery buying in 2021. Moving forward from 2023, RCL will regain its strong predictive and explanatory properties.

**Average Removal Age (ARA)** – This is the average age of the units exiting the Installed Base for any reason. It is an estimate of the average age that would be computed if you could ask every user who stopped using the device how long they had used it before replacing or other reasons for use termination.

The value of each of these metrics is more in the trend than in the point values. A comparison of the four Installed Base age metrics for Total Computing Devices is presented in this chart. The RCL and RRD-Mean will exhibit the most variance due to anomalous events such as the operating system migration and economic shocks. Therefore, currently the Average Installed Base Age and the Average Removal Age are better estimates of future replacement rates.

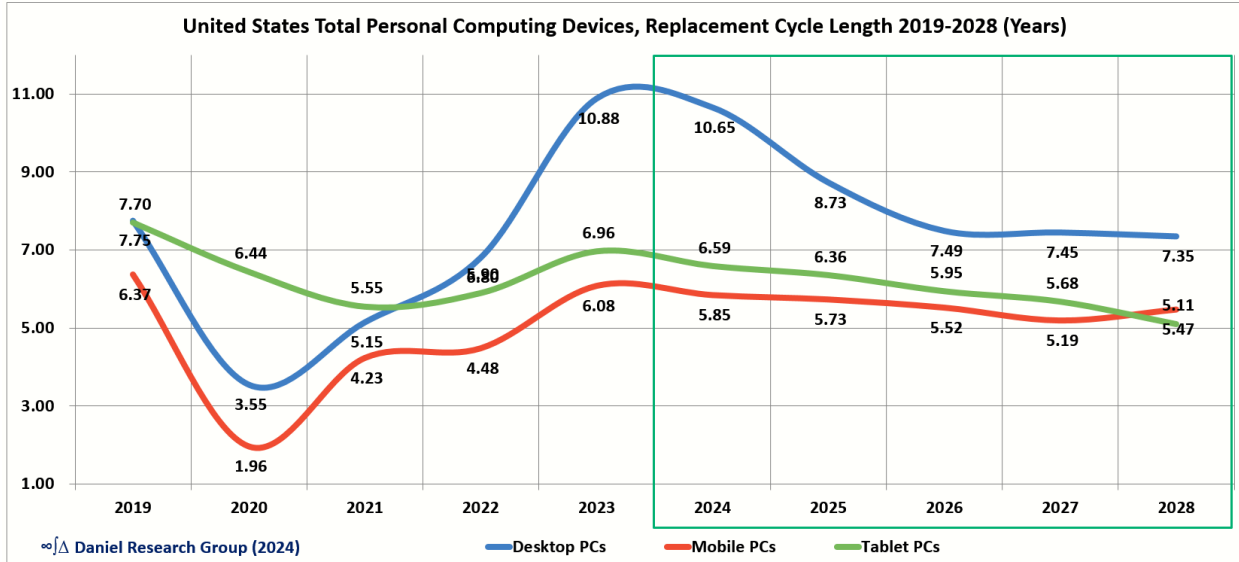
**Consumer Desktop PCs**



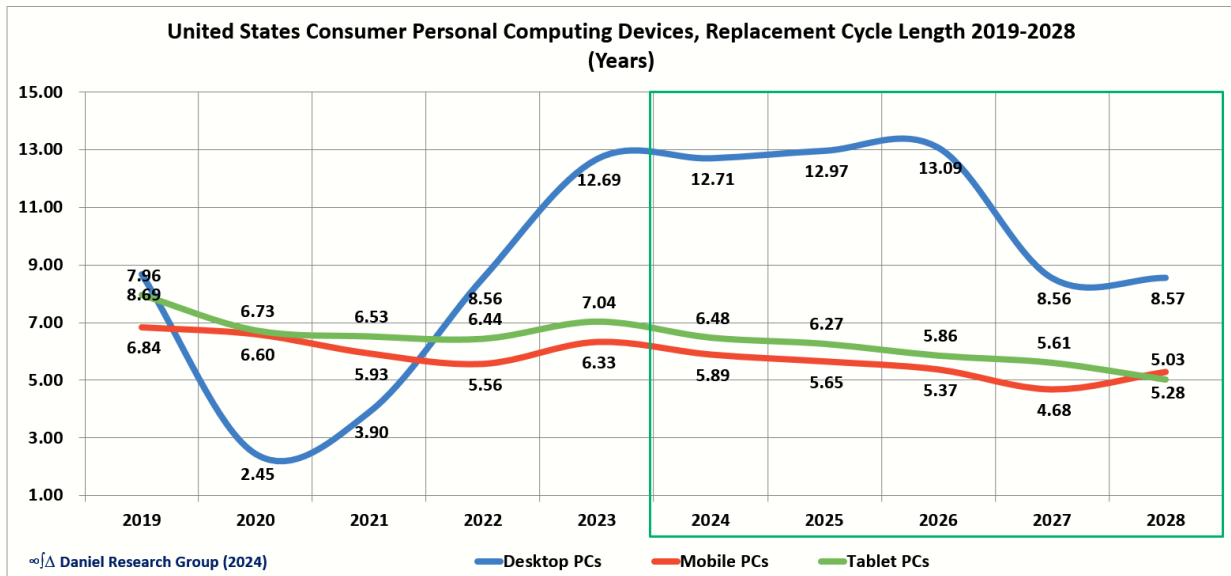
Each of the Age metrics answers a different question.

Metric	Question
<b>AIBA</b>	How old are the units in the Installed Base?
<b>ARA</b>	How old are the units people are just now no longer using.
<b>RRD-μ</b>	How much time from now will 50% of this year’s Unit Shipments still be in use?
<b>RCL</b>	How long will it take to replace all the units in the Installed Base?

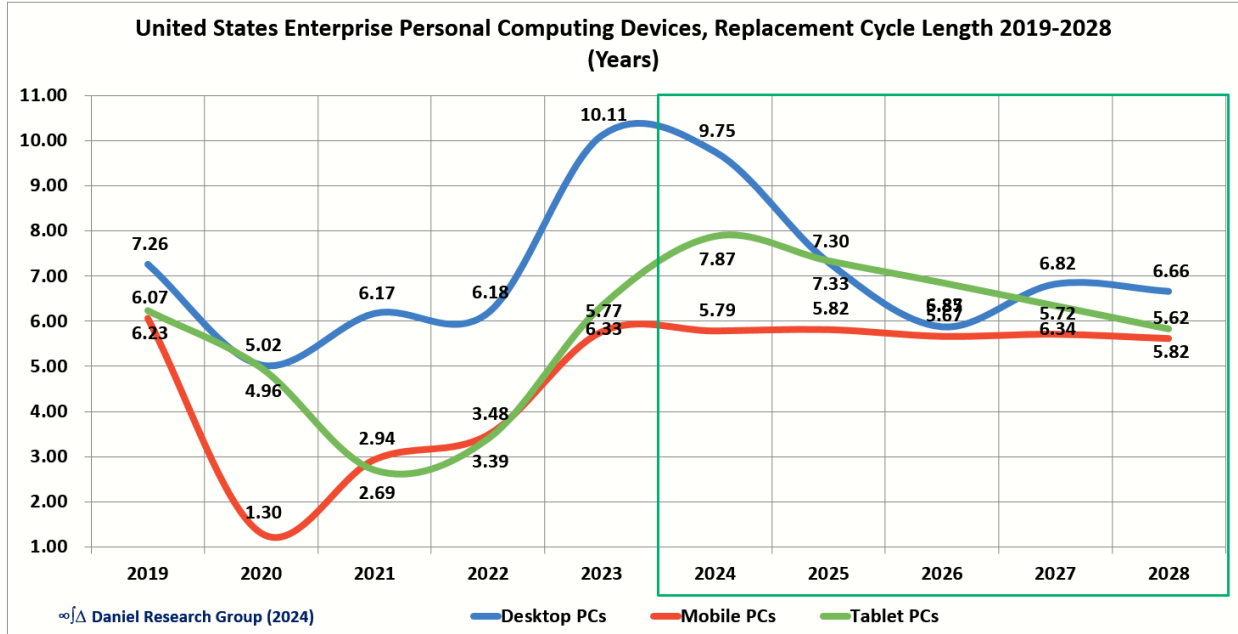
# Replacement Cycle Length Total



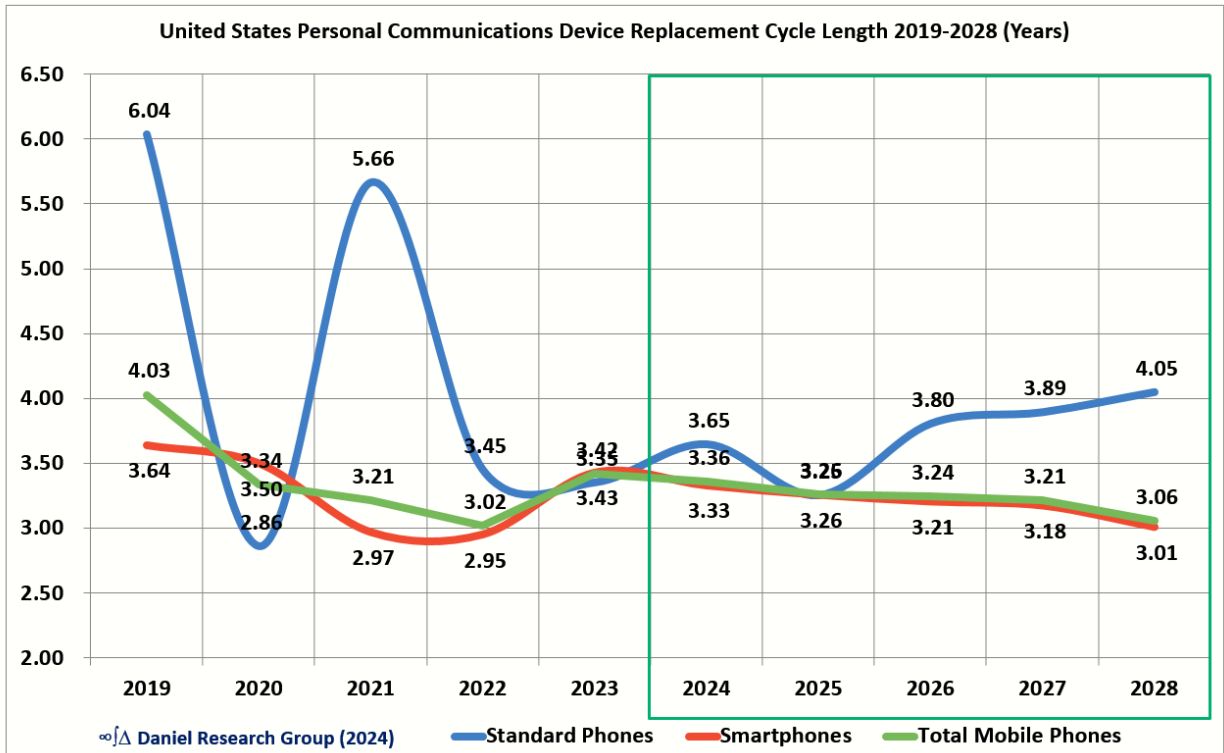
# Consumer



# Enterprise



## Mobile Phones

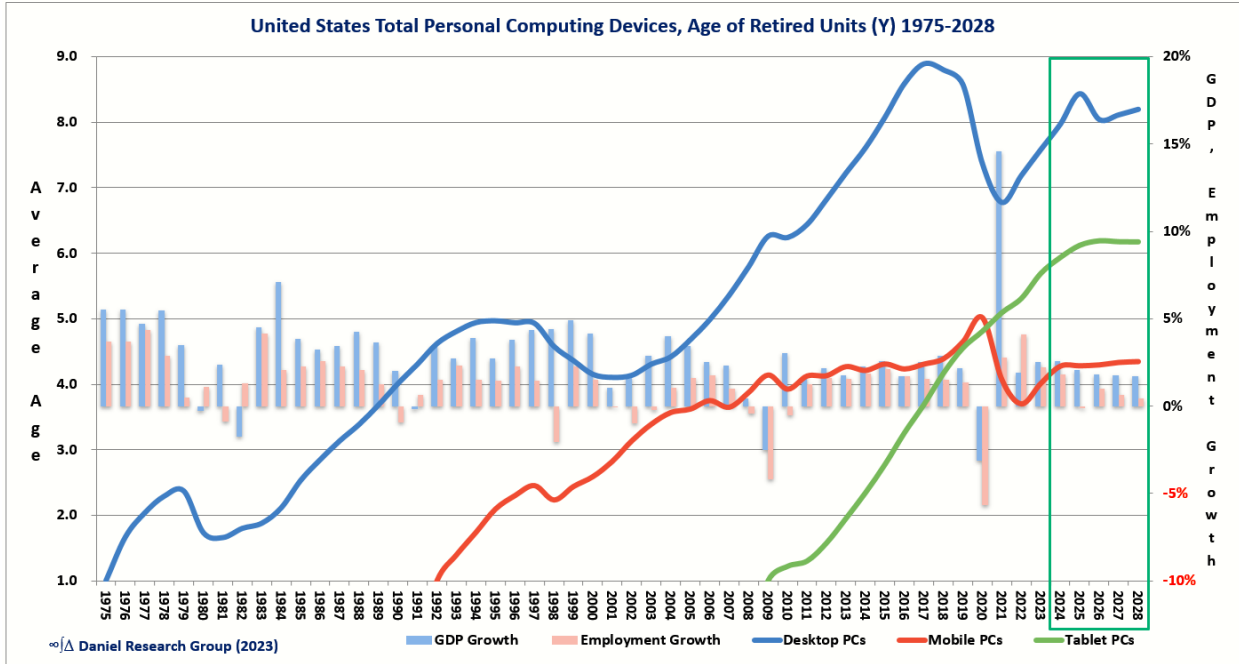


# Long-Term Charts

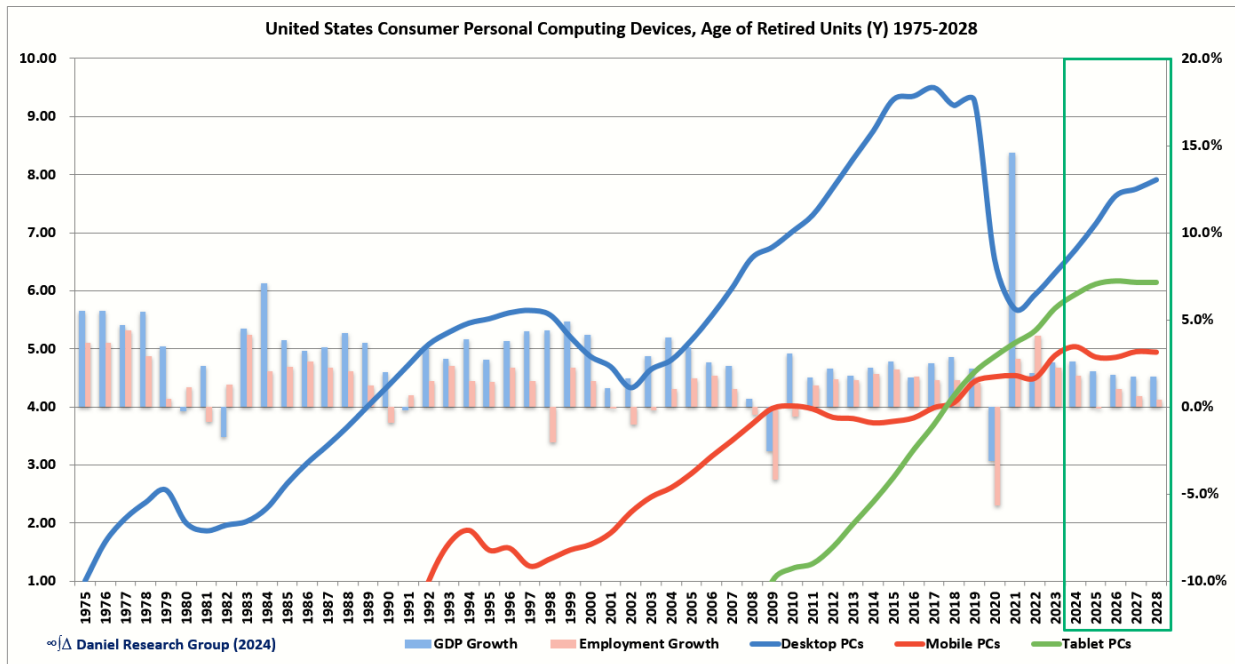
These charts provide additional historical context to better understand both the current state and the forecast in comparison to long-term trends.

## Average Removal Age

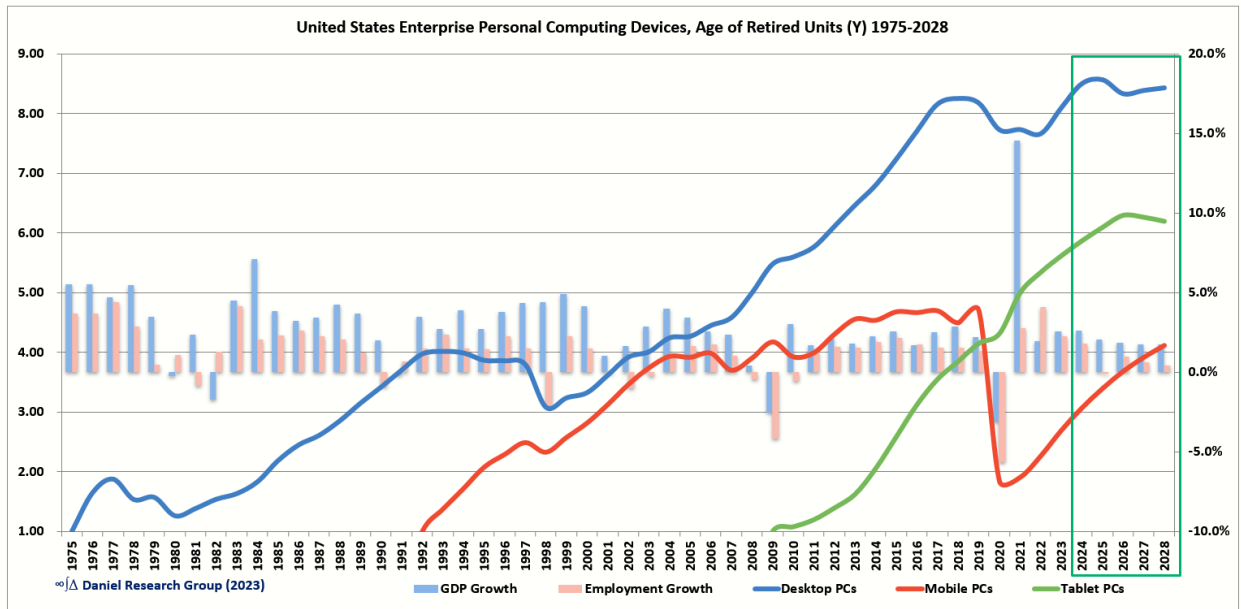
### Total



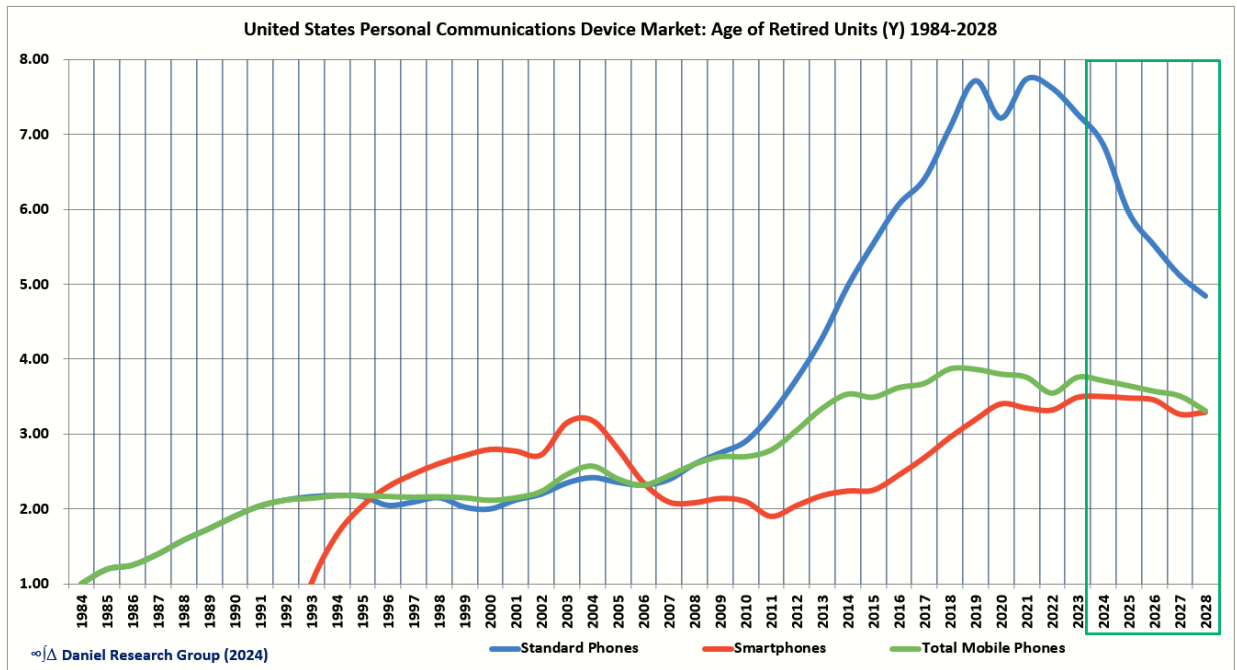
## Consumer



# Enterprise

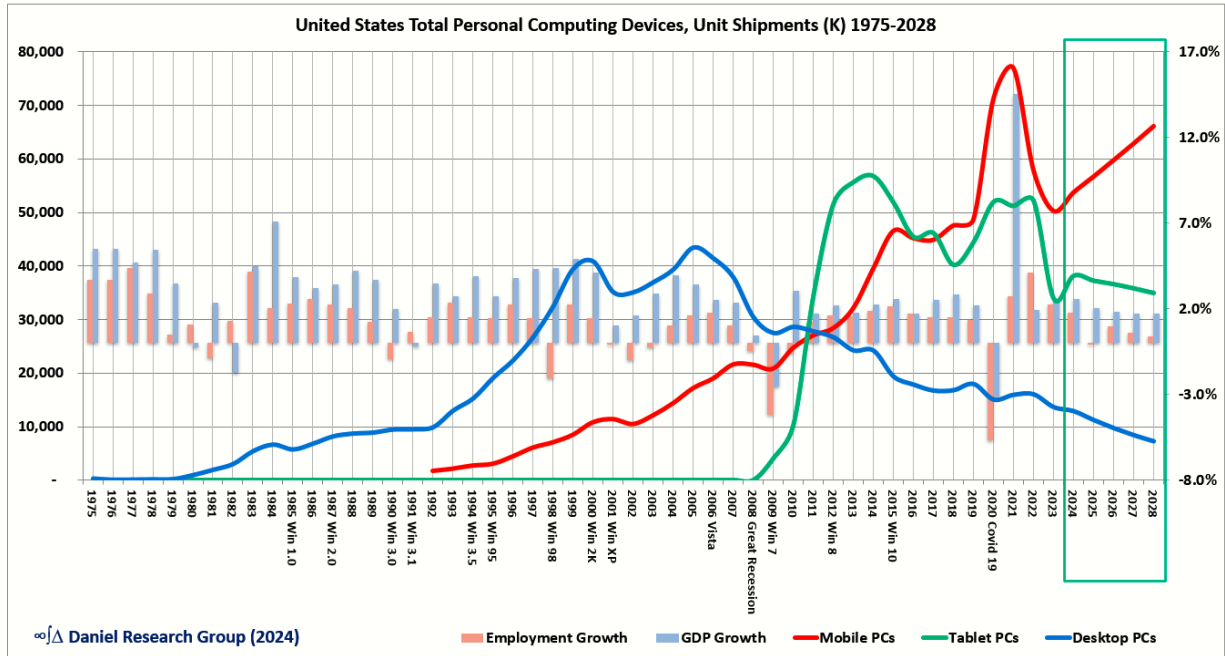


# Mobile Phones

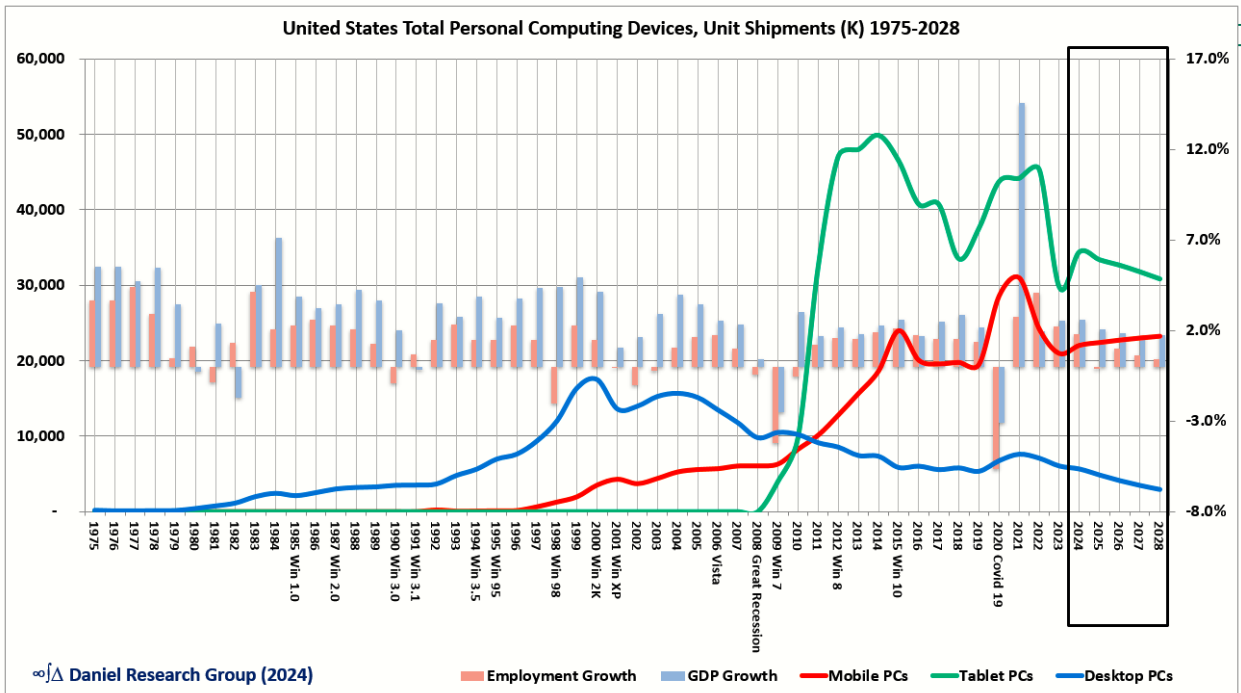




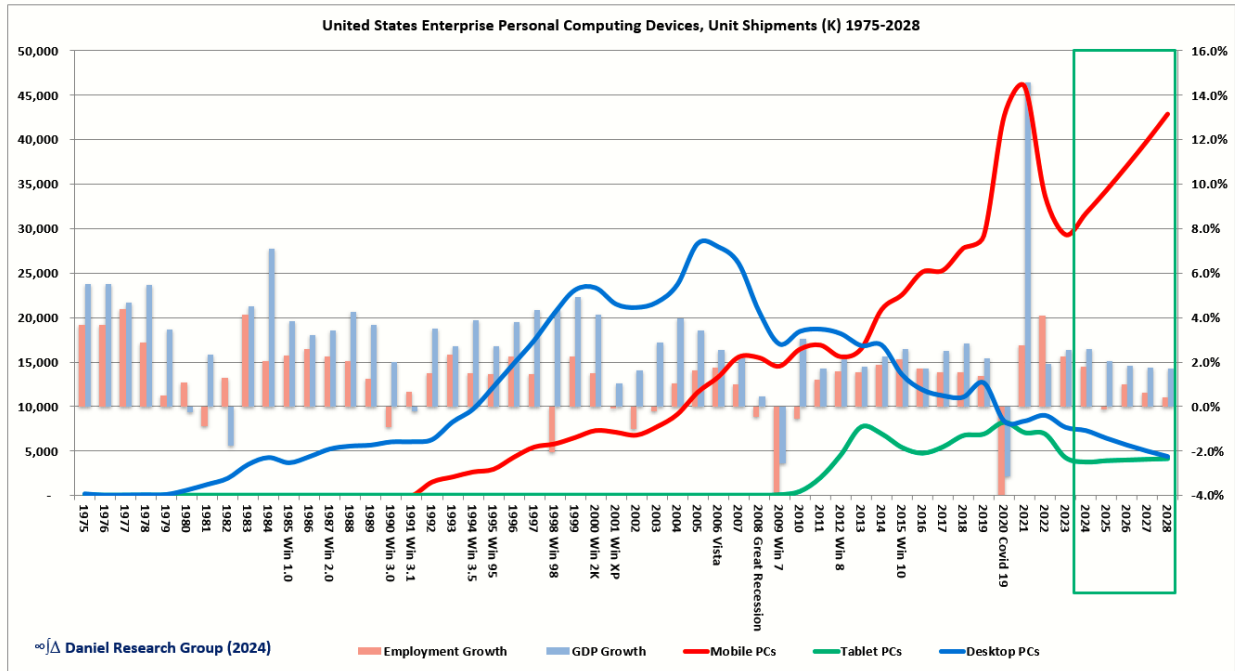
# Unit Shipments Total



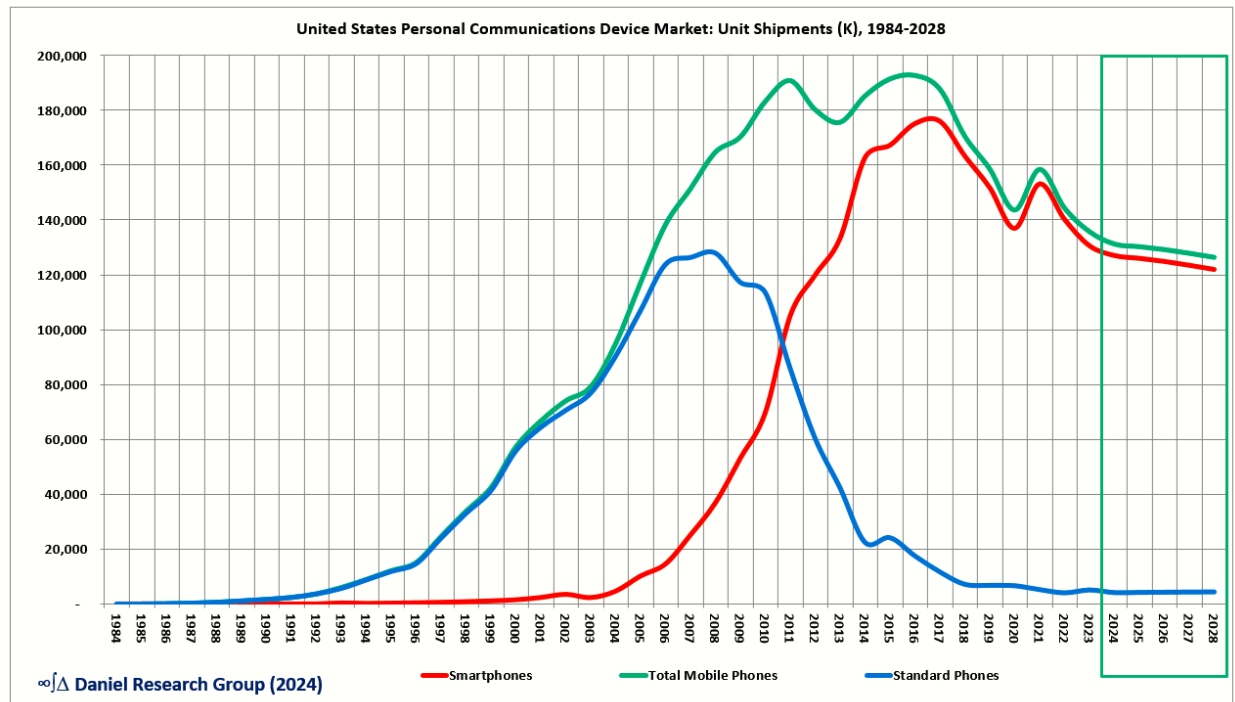
# Consumer



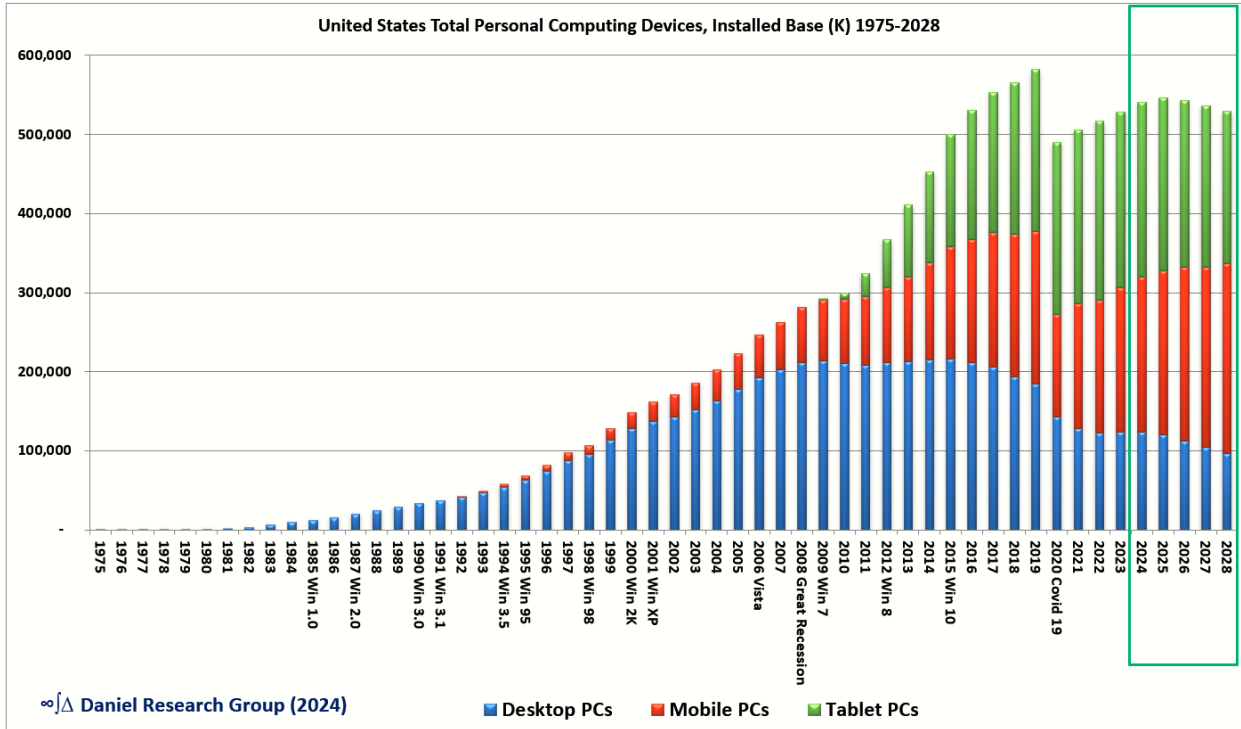
# Enterprise



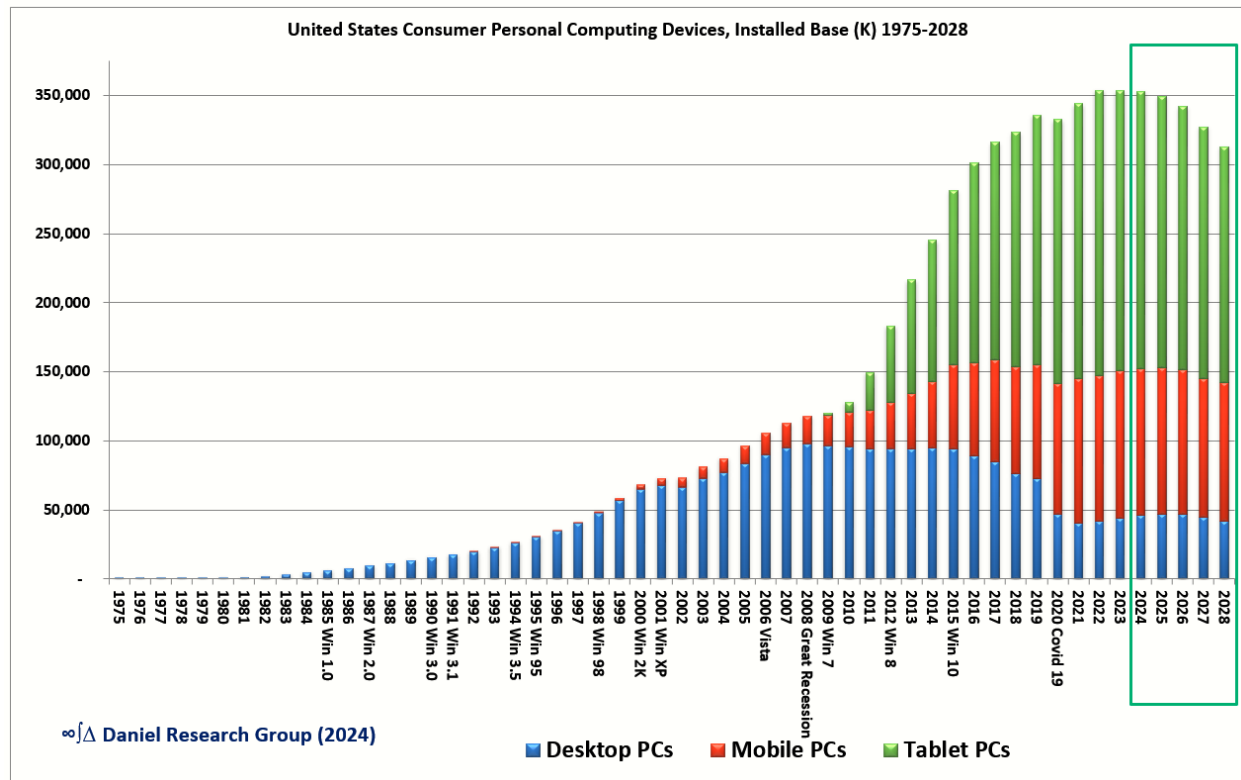
# Mobile Phones



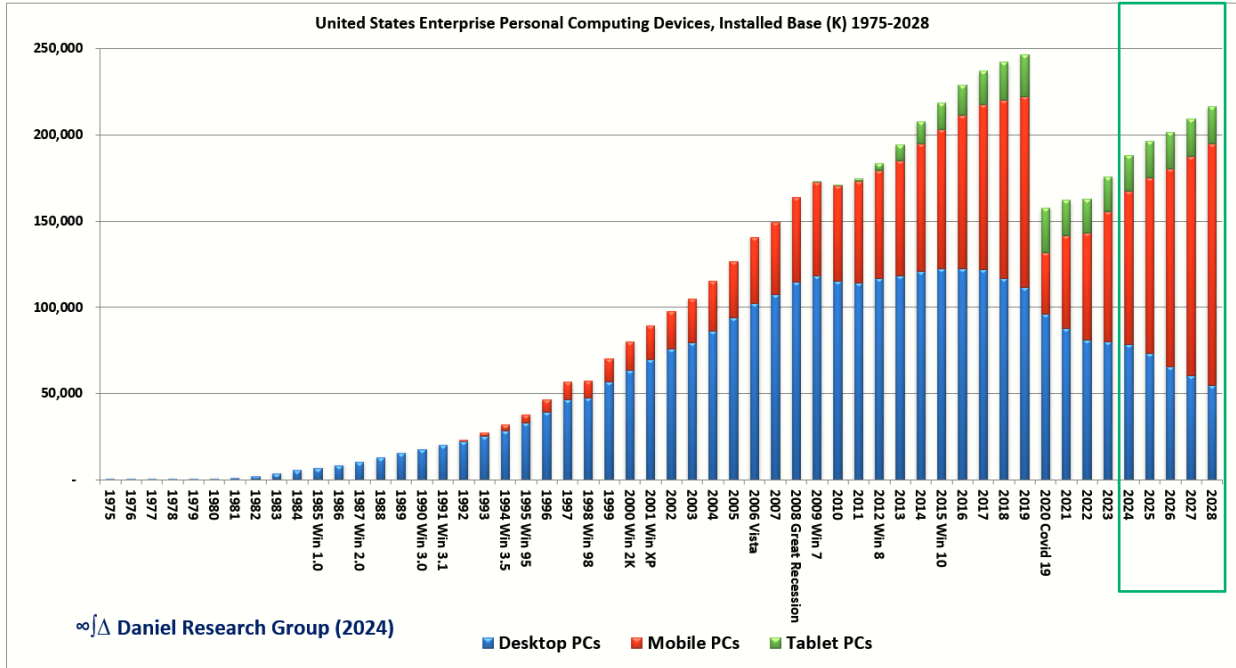
# Installed Base Total



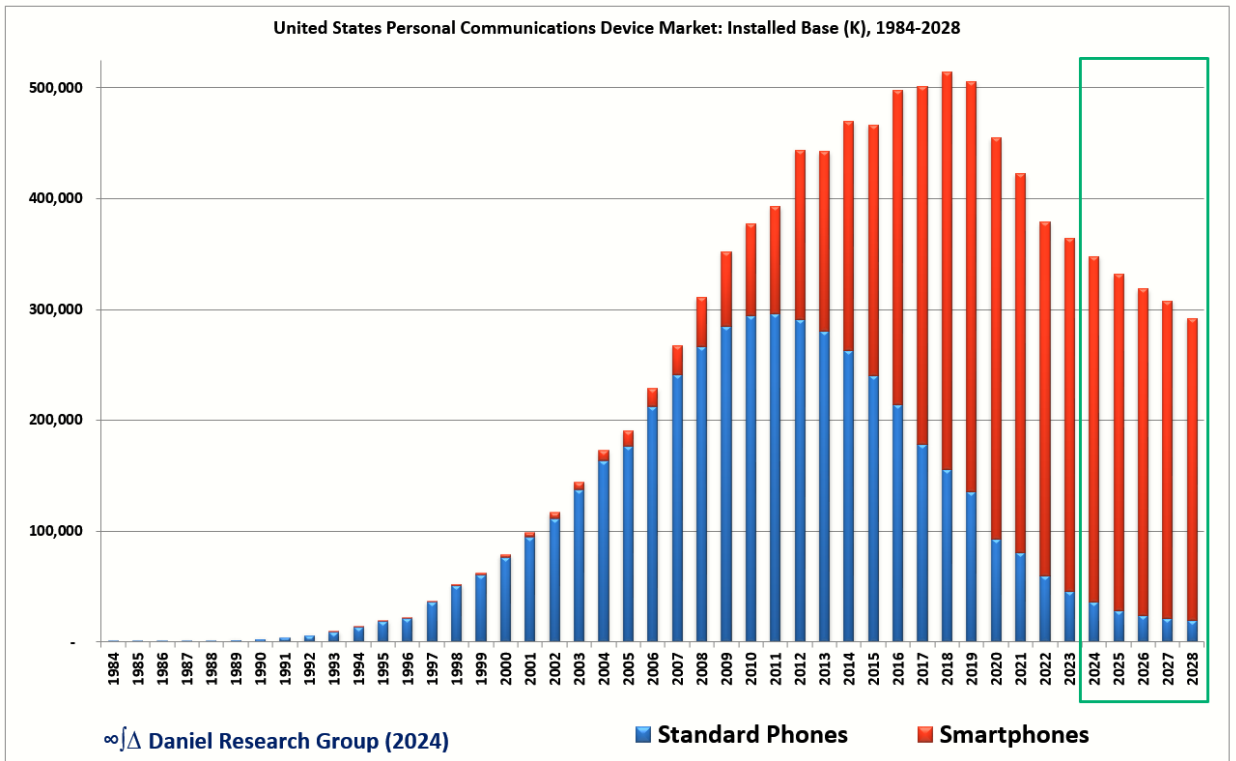
# Consumer



# Enterprise



# Mobile Phones



# Methodology

## Forecasting Approach and Process

In order to understand our forecast conclusions, a review of our forecast approach is necessary. Although forecasts of Unit Shipments and Revenues are of most interest to our clients, we consider these to be output results with very little predictive properties in and of themselves. Rather we base our forecasts on understanding the trends and the influences on those trends of the following primary causal variables.

- **Total Available Market (TAM)** – The number of potential buyers in the Consumer and/or Enterprise Segments.
- **Penetration** – The percent of buyers, households, and/or businesses, that have, or will, purchase the product or service.
- **Density** – the number of product or service units in use per penetrated household and/or business.
- **Replacement Rate** – rate at which users are replacing older units with new ones. This is primarily measured in terms of the Replacement Cycle Length. The length of time it would take to replace all the current units in the Installed Base given the initial size of the Installed Base, the current year Unit Shipments, and the current year number of units removed from the Installed Base.

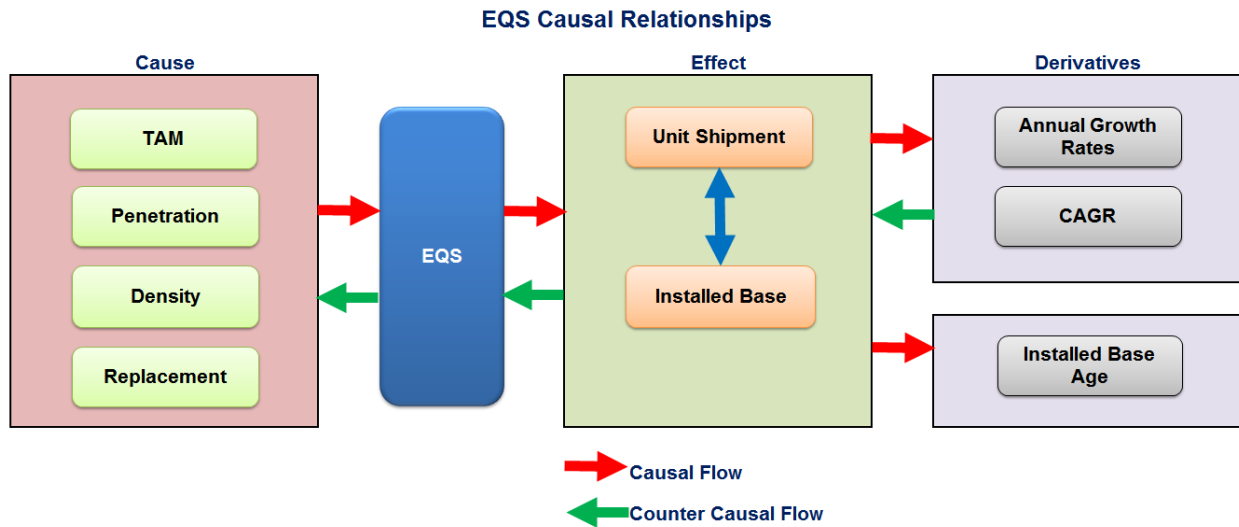
Our forecast approach proceeds in four modeling levels.

1. **Penetration** – Top-Down Long-Term models that forecast future market penetration of the primary major products categories based on long-terms historical trends.
2. **Top-Down** – The primary major products are split by segment (consumer and enterprise) and form factor, as needed.
3. **Base** – Each individual product/segment/form factor forecasts are adjusted to reflect our analysis of the economic, demographic, technological, market and user behavior influencing factors.

4. **Aggregation** – The base forecasts are rolled-up to higher levels. While some of the output metrics such as Unit Shipments, Revenues and Installed Bases are additive, other such as Density, Penetration, Replacement Cycle Length, and Installed Base Age can only be computed using DRG’s proprietary EQS methodology. In most models, the Base models are adjusted through a calibration step such that the roll-up matches the Top-Down for a specified metric.

**Models are neat, but markets are messy.** Any market model is at best an idealized simplistic version of a complex real world process. How useful any model can be is a function of how well it encapsulates the basic influencing relationships that drive cause and effect. When EQS models a **Causal Flow**, the four inputs compute the primary outputs: Unit Shipments and Installed Base, as well as the derivative metrics Annual Growth Rates, CAGRs, and the Installed Base Average Age. For example, an increase in the penetration rate will result in an increase in Unit Shipments and/or an increase in the Installed Base, as well as changing the derivative metrics.

When EQS models a **Counter Causal Flow**, the logic flows in the other direction. An increase in the Unit Shipments will require an increase in one or more of the Causal variables, as well as changing the derivative metrics.



The strength of EQS as a market modeling and forecasting tool derives from two attributes;

1. The ability to run both Causal and Counter Causal logic.
2. A closed system of relationships that can only produce outputs that meet real world constraints and criteria set by the user.

## Supporting Models

The **DRG Business Demographic Baseline and Forecast (BEDD)** is a database of United States Firms, Primary Firms, Establishments, and Payrolls by Private and Public Sectors, by 2-Digit NAICS industries, from 1998 to 2027. It is derived from data obtained from the US Census Bureau, the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Department of Defense, and the Congressional Budget Office.

The **DRG United States AI Enabled Device Forecast 2024-2034** forecasts Unit Shipments, Revenues, Installed Base, Business and Household Penetration & Density, and Installed Base Age. Device end of life age, and Replacement Rates for Desktop and Mobile Personal Computer. Tablets and Smartphones. The models use currently available actual data within the **DRG** adoption model derived from similar historical device adoption statistics.

## Forecast Updates

**DRG** will update its forecasts periodically as actual year-to-date results become available. Utilizing the **DRG ProjectionSolver and GrowthSolver** algorithms, new current year projections based on historic trended quarterly or monthly patterns are computed. Based on these projections, adjustments may be made to the primary **EQS** models.

## Sources of Historical Data

Historical data was obtained from the following available sources including press releases, published reports and presentations, and publicly available databases.

Device or Metric	Unit Shipments	Installed Base/Penetration
<b>Desktop PCs</b>	Environmental Protection Agency IDC	Computer Almanac eTForecaster International Telecommunications Union Worldbank
<b>Mobile PCs</b>	Environmental Protection Agency IDC	Computer Almanac eTForecaster International Telecommunications Union Worldbank
<b>Tablets</b>	IDC	Pew Research Center
<b>Mobile Phones</b>	Consumer Technology Association Telecommunications Industry Association IDC	Cellular Telephone Industries Association Centers for Disease Control and Prevention GSMA International Telecommunications Union Organization for Economic Co-operation and Development Telecommunications Industry Association Worldbank
<b>Households</b>	US Census Bureau Congressional Budget Office	
<b>Businesses</b>	Bureau of Economic Analysis Bureau of Labor Statistics Congressional Budget Office Department of Defense US Census Bureau US Office of Personal Management	

Data obtained from a variety of sources, often using different definitions and methodologies are frequently inconsistent with each other. **DRG** employs **EQS** to identify and correct these differences and produce historic time-series of Unit Shipments, Installed Bases, Replacement Rates, Average Ages, Densities and Penetration Rates that are internally consistent with each other, and correlate highly with external quantitative data and qualitative data criteria. **DRG** believes the resulting historical baseline is the most accurate complete accounting of the US Personal Device Market from its inception in 1975.



## About Daniel Research Group

**Daniel Research Group** is a market research and consulting firm servicing primarily technology clients. Our primary 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

