



**Daniel Research Group**  
*Understanding the Future*

# **United States Personal Device Market Size History and Forecast, 1975-2029 June 2025 Update**

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# Our Approach

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

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

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

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

The core **EQS** algorithm forecasts **Unit Shipments** and the **Installed Base** as a function of four input variables.

1. **Total Available Market**– Number of Households or Businesses in the US economy.
2. **Penetration Rate** – What Percent of those Households or Businesses own one or more of the devices.
3. **Density** – For Households or Businesses that own one or more of the devices, how many.
4. **Replacement Rate** – How long will a Households or Businesses use the device before ending use and replacing it.

# The Forecasting Challenge

## Trump Tariffs

Most credible recognized economists are of the opinion that the Trump administration's stated economic and domestic policies will lead to inflation, significant unemployment, and a recession. The unknown is the degree to which Trump will actually attempt to execute his plans, and the degree to which the legislature, the courts, and other economic actors can mitigate or block those plans.

Our forecasts assume that the final Trump Tariffs applied to Personal Computing and Communications Devices will raise prices by approximately 10% in 2025 and 15% in 2026. This will lengthen replacement, reducing demand starting Q3 2025 and all of 2026, as well as reducing both the Consumer and Enterprise Total Available Markets. Demand delayed in 2025 and 2026 will return starting in 2027.



# The United States AI Enabled Personal Computing Devices Market Size and Ten-Year Forecast May 2025

## United States Personal Device Market Market Segment Forecast Overview Total Market

		United States Total Personal Devices Unit Shipments (K)							Trend
		2024	2025	2026	2027	2028	2029	CAGR ('24-'29)	
Desktop PCs									
Desktop PC	Desktop PC	13,377	11,961	10,430	12,991	12,816	12,643	-1.1%	
AGR	AGR	-2.2%	-10.6%	-12.8%	24.6%	-1.4%	-1.4%		
Mobile PCs									
Traditional Mobile PCs		45,384	39,257.1	35,040.4	46,804.3	48,173.5	49,585.9	1.8%	
AGR		5.8%	-13.5%	-10.7%	33.6%	2.9%	2.9%		
Convertible Mobile PCs		7,363	6,304	5,744	7,635	7,815	7,997	1.7%	
AGR		-0.5%	-14.4%	-8.9%	32.9%	2.4%	2.3%		
Total Mobile PCs		52,748	45,562	40,784	54,439	55,989	57,583	1.8%	
AGR		4.9%	-13.6%	-10.5%	33.5%	2.8%	2.8%		
Total PCs									
Total PCs		66,125	57,523	51,215	67,431	68,805	70,225	1.2%	
AGR		3.4%	-13.0%	-11.0%	31.7%	2.0%	2.1%		
Tablets									
Detachable		20,706	23,131	20,835	27,690	28,317	28,889	6.9%	
AGR		7.8%	11.7%	-9.9%	32.9%	2.3%	2.0%		
Slate		19,151	14,022	11,061	13,203	12,125	11,146	-10.3%	
AGR		30.4%	-26.8%	-21.1%	19.4%	-8.2%	-8.1%		
Total Tablets		39,856	37,153	31,897	40,893	40,442	40,035	0.1%	
AGR		17.6%	-6.8%	-14.1%	28.2%	-1.1%	-1.0%		
Total Computers									
Total Computers		105,981	94,676	83,111	108,324	109,247	110,260	0.8%	
AGR		3.4%	-13.0%	-11.0%	31.7%	2.0%	2.1%		
Mobile Phones									
Standard Phone		4,563	3,713	3,083	3,955	3,848	3,755	-3.8%	
AGR		-12.5%	-18.6%	-17.0%	28.3%	-2.7%	-2.4%		
SmartPhones		128,068	115,211	98,315	129,165	128,319	127,566	-0.1%	
AGR		-1.9%	-10.0%	-14.7%	31.4%	-0.7%	-0.6%		
Total Mobile Phones		132,631	118,923	101,397	133,120	132,167	131,321	-0.2%	
AGR		-2.3%	-10.3%	-14.7%	31.3%	-0.7%	-0.6%		
Total Devices									
Total Devices		238,612	213,599	184,508	241,444	241,414	241,581	0.2%	
AGR		2.1%	-10.5%	-13.6%	30.9%	0.0%	0.1%		

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# Consumer Segment

		United States Consumer Personal Devices Unit Shipments (K)							Trend
Desktop PCs		2024	2025	2026	2027	2028	2029	CAGR ('24-'29)	
Desktop PC	Desktop PC	5,721	4,534	3,944	4,793	4,614	4,441	-4.9%	
AGR	AGR	-4.5%	-20.7%	-13.0%	21.5%	-3.7%	-3.7%		
Mobile PCs									
Traditional Mobile PCs		19,602	15,589.2	14,501.1	19,342.3	19,884.8	20,448.0	0.8%	
AGR		5.1%	-20.5%	-7.0%	33.4%	2.8%	2.8%		
Convertible Mobile PCs		2,348	1,700	1,495	1,909	1,876	1,840	-4.8%	
AGR		2.1%	-27.6%	-12.1%	27.7%	-1.7%	-1.9%		
Total Mobile PCs		21,950	17,290	15,996	21,251	21,760	22,288	0.3%	
AGR		4.8%	-21.2%	-7.5%	32.9%	2.4%	2.4%		
Total PCs									
Total PCs		27,671	21,823	19,940	26,045	26,374	26,729	-0.7%	
AGR		2.7%	-21.1%	-8.6%	30.6%	1.3%	1.3%		
Tablets									
Detachable		16,901	18,674	17,453	23,512	24,194	24,818	8.0%	
AGR		6.2%	10.5%	-6.5%	34.7%	2.9%	2.6%		
Slate		17,842	12,829	10,325	12,391	11,409	10,512	-10.0%	
AGR		30.7%	-28.1%	-19.5%	20.0%	-7.9%	-7.9%		
Total Tablets		34,743	31,502	27,779	35,902	35,602	35,329	0.3%	
AGR		17.5%	-9.3%	-11.8%	29.2%	-0.8%	-0.8%		
Total Computers									
Total Computers		62,413	53,326	47,719	61,947	61,977	62,059	-0.1%	
AGR		2.7%	-21.1%	-8.6%	30.6%	1.3%	1.3%		
Mobile Phones									
Standard Phone		4,436	3,609	2,997	3,845	3,741	3,650	-3.8%	
AGR		-12.5%	-18.6%	-17.0%	28.3%	-2.7%	-2.4%		
SmartPhones		116,457	104,823	89,413	117,429	116,622	115,905	-0.1%	
AGR		-2.0%	-10.0%	-14.7%	31.3%	-0.7%	-0.6%		
Total Mobile Phones		120,893	108,432	92,410	121,274	120,363	119,555	-0.2%	
AGR		-2.5%	-10.3%	-14.8%	31.2%	-0.8%	-0.7%		
Total Devices									
Total Devices		183,306	161,758	140,129	183,220	182,340	181,614	-0.2%	
AGR		1.6%	-11.8%	-13.4%	30.8%	-0.5%	-0.4%		

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# Enterprise Segment

		United States Enterprise Personal Devices Unit Shipments (K)							Trend
Desktop PCs		2024	2025	2026	2027	2028	2029	CAGR ('24-'29)	
Desktop PC	Desktop PC	7,656	7,428	6,486	8,198	8,202	8,202	1.4%	
AGR	AGR	-0.4%	-3.0%	-12.7%	26.4%	0.0%	0.0%		
Mobile PCs									
Traditional Mobile PCs		25,782	23,668.0	20,539.2	27,462.0	28,288.7	29,137.8	2.5%	
AGR		6.3%	-8.2%	-13.2%	33.7%	3.0%	3.0%		
Convertible Mobile PCs		5,015	4,604	4,249	5,726	5,940	6,156	4.2%	
AGR		-1.7%	-8.2%	-7.7%	34.8%	3.7%	3.6%		
Total Mobile PCs		30,798	28,272	24,788	33,188	34,228	35,294	2.8%	
AGR		4.9%	-8.2%	-12.3%	33.9%	3.1%	3.1%		
Total PCs									
Total PCs		38,454	35,700	31,274	41,386	42,430	43,496	2.5%	
AGR		3.8%	-7.2%	-12.4%	32.3%	2.5%	2.5%		
Tablets									
Detachable		3,805	4,457	3,382	4,179	4,123	4,071	1.4%	
AGR		15.3%	17.1%	-24.1%	23.6%	-1.3%	-1.3%		
Slate		1,309	1,193	736	812	717	634	-13.5%	
AGR		26.6%	-8.8%	-38.3%	10.3%	-11.7%	-11.5%		
Total Tablets		5,114	5,650	4,118	4,991	4,840	4,705	-1.7%	
AGR		18.0%	10.5%	-27.1%	21.2%	-3.0%	-2.8%		
Total Computers									
Total Computers		43,568	41,350	35,392	46,377	47,270	48,201	2.0%	
AGR		3.8%	-7.2%	-12.4%	32.3%	2.5%	2.5%		
Mobile Phones									
Standard Phone		127	104	86	110	107	105	-3.8%	
AGR		-12.5%	-18.6%	-17.0%	28.3%	-2.7%	-2.4%		
SmartPhones		11,610	10,388	8,901	11,737	11,697	11,661	0.1%	
AGR		-0.8%	-10.5%	-14.3%	31.9%	-0.3%	-0.3%		
Total Mobile Phones		11,738	10,492	8,987	11,847	11,804	11,766	0.0%	
AGR		-0.9%	-10.6%	-14.3%	31.8%	-0.4%	-0.3%		
Total Devices									
Total Devices		55,306	51,841	44,380	58,224	59,074	59,967	1.6%	
AGR		3.9%	-6.3%	-14.4%	31.2%	1.5%	1.5%		

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# Product Forecast Tables and Charts

## Desktop PCs

### Consumer

United States Consumer Desktop PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	5,721	4,534	3,944	4,793	4,614	4,441	-0.5%	
AGR	-4.5%	-20.7%	-13.0%	21.5%	-3.7%	-3.7%		
Revenue (\$M)	6,922	5,815	5,666	6,849	6,557	6,277	1.9%	
AGR	-4.8%	-16.0%	-2.6%	20.9%	-4.3%	-4.3%		
Average Price (\$)	1,210	1,283	1,437	1,429	1,421	1,414	2.5%	
AGR	-0.3%	6.0%	12.0%	-0.5%	-0.5%	-0.5%		
Installed Base (K)	16,336	15,652	14,986	14,834	14,262	13,359	-3.9%	
AGR	-2.2%	-4.2%	-4.3%	-1.0%	-3.9%	-6.3%		
Removal Age (Y)	4.01	4.26	4.48	4.23	4.18	4.10	-1.0%	
AGR	-1.2%	6.3%	5.0%	-5.4%	-1.3%	-1.8%		
Average Installed Base Age (Y)	4.04	4.13	4.24	4.20	4.22	4.26	0.8%	
AGR	-0.8%	2.2%	2.8%	-0.8%	0.3%	1.0%		
Replacement Cycle Length (Y)	3.69	4.00	4.25	4.00	3.75	3.50	-3.3%	
AGR	0.5%	8.5%	6.3%	-5.9%	-6.3%	-6.7%		
Units per Households (#)	1.00	1.00	1.00	1.00	1.00	1.00		
AGR								
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	12.1%	11.5%	10.9%	10.7%	10.2%	9.5%	-2.7%	

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### Enterprise

United States Enterprise Desktop PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	7,656	7,428	6,486	8,198	8,202	8,202	2.5%	
AGR	-0.4%	-3.0%	-12.7%	26.4%	0.0%	0.0%		
Revenue (\$M)	6,040	6,211	6,075	7,597	7,521	7,442	4.6%	
AGR	1.5%	2.8%	-2.2%	25.1%	-1.0%	-1.1%		
Average Price (\$)	789	836	937	927	917	907	2.1%	
AGR	1.9%	6.0%	12.0%	-1.0%	-1.0%	-1.0%		
Installed Base (K)	25,018	24,334	23,568	23,825	23,486	22,634	-1.8%	
AGR	-6.7%	-2.7%	-3.1%	1.1%	-1.4%	-3.6%		
Removal Age (Y)	4.71	4.76	4.86	4.42	4.20	3.98	-4.4%	
AGR	-2.0%	1.0%	2.3%	-9.1%	-5.1%	-5.3%		
Average Installed Base Age (Y)	4.57	4.45	4.40	4.21	4.11	4.08	-2.1%	
AGR	-1.5%	-2.7%	-1.0%	-4.3%	-2.4%	-0.9%		
Replacement Cycle Length (Y)	3.64	4.00	4.25	4.00	3.75	3.50	-3.3%	
AGR	-1.5%	9.8%	6.2%	-5.9%	-6.3%	-6.7%		
Units per Businesses (#)	6.06	6.23	6.32	6.75	7.03	7.18	3.6%	
AGR	-2.7%	2.7%	1.5%	6.7%	4.2%	2.2%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	65.2%	62.3%	59.4%	56.4%	53.4%	50.3%	-14.9%	

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## Total Desktop PCs

United States Consumer & Enterprise Desktop PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	13,377	11,961	10,430	12,991	12,816	12,643	1.4%	
AGR	-2.2%	-10.6%	-12.8%	24.6%	-1.4%	-1.4%		
Revenue (\$M)	12,962	12,026	11,741	14,446	14,078	13,720	3.3%	
AGR	-1.9%	-7.2%	-2.4%	23.0%	-2.5%	-2.5%		
Average Price (\$)	969	1,005	1,126	1,112	1,099	1,085	1.9%	
AGR	0.2%	3.8%	12.0%	-1.2%	-1.2%	-1.2%		
Installed Base (K)	41,354	39,987	38,554	38,659	37,748	35,993	-2.6%	
AGR	-5.0%	-3.3%	-3.6%	0.3%	-2.4%	-4.6%		
Removal Age (Y)	4.44	4.57	4.71	4.35	4.19	4.02	-3.1%	
AGR	-1.8%	2.9%	3.2%	-7.7%	-3.7%	-4.0%		
Average Installed Base Age (Y)	4.36	4.32	4.34	4.21	4.15	4.15	-1.0%	
AGR	-1.4%	-0.9%	0.4%	-2.9%	-1.4%	-0.1%		
Replacement Cycle Length (Y)	3.66	4.00	4.25	4.00	3.75	3.50	-3.3%	
AGR	-0.7%	9.3%	6.3%	-5.9%	-6.3%	-6.7%		
Units per Households & Businesses (#)	2.02	2.04	2.06	2.11	2.14	2.18	1.6%	
AGR	-2.5%	1.2%	0.8%	2.2%	1.9%	1.7%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	14.5%	13.8%	13.0%	12.7%	12.1%	11.2%	-3.3%	
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## Mobile PC

## Consumer Convertible

United States Consumer Convertible Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	2,348	1,700	1,495	1,909	1,876	1,840	2.0%	
AGR	2.1%	-27.6%	-12.1%	27.7%	-1.7%	-1.9%		
Revenue (\$M)	2,123	1,668	1,716	2,442	2,675	2,925	15.1%	
AGR	36.6%	-21.4%	2.9%	42.3%	9.5%	9.4%		
Average Price (\$)	904	981	1,148	1,279	1,426	1,590	12.8%	
AGR	33.8%	8.5%	17.0%	11.5%	11.5%	11.5%		
Installed Base (K)	9,000	8,755	8,541	8,550	8,341	7,919	-2.5%	
AGR	-2.8%	-2.7%	-2.4%	0.1%	-2.5%	-5.1%		
Removal Age (Y)	4.15	4.89	5.40	5.36	5.37	5.38	2.4%	
AGR	5.3%	17.8%	10.4%	-0.8%	0.3%	0.1%		
Average Installed Base Age (Y)	4.19	4.44	4.67	4.70	4.72	4.72	1.6%	
AGR	5.0%	6.0%	5.2%	0.6%	0.5%	0.0%		
Replacement Cycle Length (Y)	4.45	5.50	6.00	5.50	5.00	4.50	-4.9%	
AGR	-3.8%	23.5%	9.1%	-8.3%	-9.1%	-10.0%		
Units per Households (#)	1.00	1.05	1.12	1.19	1.21	1.21	3.5%	
AGR		5.1%	7.0%	5.5%	2.4%	-0.6%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	6.7%	6.1%	5.5%	5.2%	4.9%	4.6%	-2.0%	
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## Consumer Traditional

United States Consumer Traditional Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	19,602	15,589	14,501	19,342	19,885	20,448	7.0%	
AGR	5.1%	-20.5%	-7.0%	33.4%	2.8%	2.8%		
Revenue (\$M)	23,811	20,546	22,361	31,214	33,583	36,141	15.2%	
AGR	8.4%	-13.7%	8.8%	39.6%	7.6%	7.6%		
Average Price (\$)	1,215	1,318	1,542	1,614	1,689	1,767	7.6%	
AGR	3.1%	8.5%	17.0%	4.7%	4.7%	4.7%		
Installed Base (K)	91,407	90,535	90,031	92,547	93,693	93,388	0.8%	
AGR	-0.8%	-1.0%	-0.6%	2.8%	1.2%	-0.3%		
Removal Age (Y)	1.04	1.06	1.03	0.87	0.94	1.01	-1.0%	
AGR	-0.7%	1.6%	-2.0%	-15.9%	8.3%	7.7%		
Average Installed Base Age (Y)	4.41	4.61	4.79	4.76	4.72	4.67	0.3%	
AGR	3.2%	4.5%	3.9%	-0.7%	-0.8%	-1.1%		
Replacement Cycle Length (Y)	5.49	6.50	7.00	6.50	6.00	5.50	-4.1%	
AGR	-4.1%	18.5%	7.7%	-7.1%	-7.7%	-8.3%		
Units per Households (#)	1.00	1.04	1.09	1.13	1.15	1.15	2.7%	
AGR		3.6%	5.1%	3.9%	1.9%	-0.2%		
Market Penetration (%)	68.0%	64.3%	60.3%	59.0%	58.1%	57.5%	-10.4%	
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend

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## Consumer Total

United States Consumer Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	21,950	17,290	15,996	21,251	21,760	22,288	6.6%	
AGR	4.8%	-21.2%	-7.5%	32.9%	2.4%	2.4%		
Revenue (\$M)	25,934	22,214	24,077	33,657	36,258	39,066	15.2%	
AGR	10.2%	-14.3%	8.4%	39.8%	7.7%	7.7%		
Average Price (\$)	1,182	1,285	1,505	1,584	1,666	1,753	8.1%	
AGR	5.2%	8.7%	17.2%	5.2%	5.2%	5.2%		
Installed Base (K)	100,407	99,290	98,572	101,097	102,034	101,307	0.5%	
AGR	-1.0%	-1.1%	-0.7%	2.6%	0.9%	-0.7%		
Removal Age (Y)	4.92	5.55	5.99	5.89	5.85	5.77	1.0%	
AGR	2.8%	12.8%	7.9%	-1.6%	-0.7%	-1.3%		
Average Installed Base Age (Y)	4.39	4.59	4.78	4.75	4.72	4.67	0.4%	
AGR	3.5%	4.7%	4.1%	-0.5%	-0.7%	-1.1%		
Replacement Cycle Length (Y)	5.37	6.39	6.90	6.40	5.90	5.40	-4.1%	
AGR	-4.1%	19.1%	7.9%	-7.2%	-7.8%	-8.4%		
Units per Households (#)	1.05	1.08	1.14	1.18	1.20	1.20	2.6%	
AGR	-0.1%	3.5%	5.1%	3.9%	1.7%	-0.4%		
Market Penetration (%)	71.3%	67.4%	63.0%	61.6%	60.6%	59.9%	-11.4%	
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend

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## Enterprise Convertible

United States Enterprise Convertible Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	5,015	4,604	4,249	5,726	5,940	6,156	7.5%	
AGR	-1.7%	-8.2%	-7.7%	34.8%	3.7%	3.6%		
Revenue (\$M)	3,566	3,551	3,835	5,421	5,899	6,414	15.9%	
AGR	18.5%	-0.4%	8.0%	41.4%	8.8%	8.7%		
Average Price (\$)	711	771	903	947	993	1,042	7.8%	
AGR	20.5%	8.5%	17.0%	4.9%	4.9%	4.9%		
Installed Base (K)	15,967	17,143	17,502	18,583	18,392	19,093	2.7%	
AGR	3.8%	7.4%	2.1%	6.2%	-1.0%	3.8%		
Removal Age (Y)	3.14	3.71	4.02	3.96	3.87	4.06	2.2%	
AGR	10.9%	18.1%	8.4%	-1.5%	-2.3%	4.8%		
Average Installed Base Age (Y)	3.45	3.67	3.92	3.95	4.04	4.02	2.3%	
AGR	9.2%	6.4%	6.9%	0.8%	2.1%	-0.5%		
Replacement Cycle Length (Y)	4.60	6.00	5.50	5.00	4.00	4.50	-6.9%	
AGR	-2.1%	30.4%	-8.3%	-9.1%	-20.0%	12.5%		
Units per Businesses (#)	3.48	3.36	3.18	3.22	3.09	3.14	-1.7%	
AGR	-11.9%	-3.3%	-5.5%	1.3%	-4.1%	1.8%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	72.5%	81.3%	87.8%	92.2%	95.2%	97.0%	24.5%	
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## Enterprise Traditional

United States Enterprise Traditional Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	25,782	23,668	20,539	27,462	28,289	29,138	5.3%	
AGR	6.3%	-8.2%	-13.2%	33.7%	3.0%	3.0%		
Revenue (\$M)	18,993	18,917	19,208	27,225	29,730	32,464	14.5%	
AGR	15.1%	-0.4%	1.5%	41.7%	9.2%	9.2%		
Average Price (\$)	737	799	935	991	1,051	1,114	8.7%	
AGR	8.3%	8.5%	17.0%	6.0%	6.0%	6.0%		
Installed Base (K)	97,944	102,903	105,807	112,766	117,546	120,014	3.9%	
AGR	4.7%	5.1%	2.8%	6.6%	4.2%	2.1%		
Removal Age (Y)	4.62	5.00	5.36	5.19	5.15	5.05	0.3%	
AGR	0.4%	8.3%	7.3%	-3.3%	-0.7%	-1.9%		
Average Installed Base Age (Y)	4.09	4.16	4.32	4.29	4.29	4.30	0.8%	
AGR	0.7%	1.9%	3.8%	-0.7%	-0.1%	0.3%		
Replacement Cycle Length (Y)	5.57	6.50	7.00	6.50	6.00	5.50	-4.1%	
AGR	-2.1%	16.7%	7.7%	-7.1%	-7.7%	-8.3%		
Units per Businesses (#)	19.42	20.34	20.64	21.80	22.47	22.69	2.8%	
AGR	3.4%	4.8%	1.5%	5.6%	3.1%	1.0%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	79.6%	80.7%	81.7%	82.6%	83.6%	84.4%	4.8%	
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## Enterprise Total

United States Enterprise Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	30,798	28,272	24,788	33,188	34,228	35,294	5.7%	
AGR	4.9%	-8.2%	-12.3%	33.9%	3.1%	3.1%		
Revenue (\$M)	22,559	22,469	23,043	32,646	35,630	38,878	14.7%	
AGR	15.7%	-0.4%	2.6%	41.7%	9.1%	9.1%		
Average Price (\$)	732	795	930	984	1,041	1,102	8.5%	
AGR	10.2%	8.5%	17.0%	5.8%	5.8%	5.8%		
Installed Base (K)	113,911	120,045	123,310	131,349	135,938	139,107	3.8%	
AGR	4.5%	5.4%	2.7%	6.5%	3.5%	2.3%		
Removal Age (Y)	4.38	4.80	5.14	4.97	4.90	4.87	0.4%	
AGR	1.2%	9.5%	7.0%	-3.2%	-1.3%	-0.6%		
Average Installed Base Age (Y)	3.99	4.09	4.26	4.24	4.24	4.25	1.0%	
AGR	1.6%	2.4%	4.2%	-0.5%	0.1%	0.2%		
Replacement Cycle Length (Y)	5.40	6.42	6.73	6.22	5.59	5.33	-4.6%	
AGR	-2.1%	18.8%	4.8%	-7.5%	-10.2%	-4.6%		
Units per Businesses (#)	18.49	19.57	20.00	21.29	21.97	22.41	3.4%	
AGR	3.9%	5.9%	2.2%	6.4%	3.2%	2.0%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	97.2%	97.8%	98.2%	98.6%	98.9%	99.1%	1.9%	

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## Total Convertible Mobile PCs

United States Consumer & Enterprise Convertible Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	7,363	6,304	5,744	7,635	7,815	7,997	6.1%	
AGR	-0.5%	-14.4%	-8.9%	32.9%	2.4%	2.3%		
Revenue (\$M)	5,689	5,220	5,551	7,864	8,574	9,340	15.7%	
AGR	24.7%	-8.2%	6.3%	41.7%	9.0%	8.9%		
Average Price (\$)	773	828	966	1,030	1,097	1,168	9.0%	
AGR	25.3%	7.2%	16.7%	6.6%	6.5%	6.5%		
Installed Base (K)	24,967	25,897	26,044	27,133	26,733	27,012	1.1%	
AGR	1.3%	3.7%	0.6%	4.2%	-1.5%	1.0%		
Removal Age (Y)	3.51	4.12	4.47	4.38	4.28	4.42	1.8%	
AGR	8.2%	17.5%	8.4%	-1.9%	-2.3%	3.2%		
Average Installed Base Age (Y)	3.71	3.93	4.16	4.18	4.23	4.21	1.7%	
AGR	7.2%	5.9%	5.9%	0.4%	1.3%	-0.5%		
Replacement Cycle Length (Y)	4.55	5.82	5.65	5.15	4.25	4.50	-6.2%	
AGR	-2.7%	28.0%	-2.9%	-9.0%	-17.3%	5.8%		
Units per Households & Businesses (#)	1.84	1.93	1.99	2.09	2.08	2.14	2.6%	
AGR	-1.9%	5.0%	3.1%	5.2%	-0.2%	2.6%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	9.7%	9.4%	9.1%	9.0%	8.8%	8.6%	-1.1%	

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## Total Traditional Mobile PCs

United States Consumer & Enterprise Traditional Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	45,384	39,257	35,040	46,804	48,174	49,586	6.0%	
AGR	5.8%	-13.5%	-10.7%	33.6%	2.9%	2.9%		
Revenue (\$M)	42,804	39,464	41,569	58,440	63,314	68,605	14.8%	
AGR	11.3%	-7.8%	5.3%	40.6%	8.3%	8.4%		
Average Price (\$)	943	1,005	1,186	1,249	1,314	1,384	8.3%	
AGR	5.2%	6.6%	18.0%	5.2%	5.3%	5.3%		
Installed Base (K)	189,351	193,438	195,838	205,313	211,239	213,402	2.5%	
AGR	1.9%	2.2%	1.2%	4.8%	2.9%	1.0%		
Removal Age (Y)	4.79	5.27	5.67	5.52	5.48	5.37	0.5%	
AGR	1.4%	10.2%	7.5%	-2.6%	-0.8%	-1.9%		
Average Installed Base Age (Y)	4.23	4.36	4.53	4.50	4.48	4.46	0.6%	
AGR	2.1%	3.2%	3.9%	-0.7%	-0.5%	-0.4%		
Replacement Cycle Length (Y)	5.53	6.50	7.00	6.50	6.00	5.50	-4.1%	
AGR	-3.1%	17.5%	7.7%	-7.1%	-7.7%	-8.3%		
Units per Households & Businesses (#)	1.96	2.09	2.23	2.36	2.44	2.47	4.2%	
AGR	2.7%	6.5%	6.6%	5.9%	3.4%	1.1%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	68.5%	65.0%	61.2%	60.1%	59.2%	58.7%	-9.8%	
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## Total Mobile PC

United States Consumer & Enterprise Mobile PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	52,748	45,562	40,784	54,439	55,989	57,583	6.0%	
AGR	4.9%	-13.6%	-10.5%	33.5%	2.8%	2.8%		
Revenue (\$M)	48,493	44,683	47,120	66,303	71,888	77,944	14.9%	
AGR	12.7%	-7.9%	5.5%	40.7%	8.4%	8.4%		
Average Price (\$)	919	981	1,155	1,218	1,284	1,354	8.4%	
AGR	7.5%	6.7%	17.8%	5.4%	5.4%	5.4%		
Installed Base (K)	214,318	219,335	221,882	232,446	237,971	240,414	2.3%	
AGR	1.9%	2.3%	1.2%	4.8%	2.4%	1.0%		
Removal Age (Y)	4.61	5.12	5.50	5.35	5.29	5.24	0.6%	
AGR	2.0%	11.0%	7.4%	-2.6%	-1.2%	-1.0%		
Average Installed Base Age (Y)	4.16	4.30	4.48	4.45	4.44	4.42	0.7%	
AGR	2.6%	3.5%	4.1%	-0.6%	-0.3%	-0.4%		
Replacement Cycle Length (Y)	5.39	6.41	6.80	6.30	5.72	5.36	-4.4%	
AGR	-3.0%	19.0%	6.1%	-7.4%	-9.2%	-6.2%		
Units per Households & Businesses (#)	2.10	2.12	2.17	2.26	2.31	2.34	2.5%	
AGR	2.7%	1.0%	2.1%	4.5%	2.3%	1.3%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	72.5%	72.7%	71.4%	70.9%	70.4%	69.6%	-2.9%	
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## Tablets

### Consumer Slate

United States Consumer Slate Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	17,842	12,829	10,325	12,391	11,409	10,512	-4.9%	
AGR	30.7%	-28.1%	-19.5%	20.0%	-7.9%	-7.9%		
Revenue (\$M)	3,365	2,625	2,472	3,082	2,949	2,823	1.8%	
AGR	17.0%	-22.0%	-5.8%	24.7%	-4.3%	-4.3%		
Average Price (\$)	189	205	239	249	258	269	7.0%	
AGR	-10.4%	8.5%	17.0%	3.9%	3.9%	3.9%		
Installed Base (K)	107,879	98,761	90,115	83,868	77,129	70,112	-8.2%	
AGR	-8.4%	-8.5%	-8.8%	-6.9%	-8.0%	-9.1%		
Removal Age (Y)	6.30	7.06	7.58	7.54	7.48	7.44	1.3%	
AGR	0.7%	12.0%	7.4%	-0.6%	-0.8%	-0.5%		
Average Installed Base Age (Y)	5.43	5.58	5.73	5.70	5.68	5.63	0.2%	
AGR	2.3%	2.8%	2.7%	-0.4%	-0.5%	-0.7%		
Replacement Cycle Length (Y)	4.89	5.50	5.75	5.50	5.25	5.00	-2.4%	
AGR	-6.5%	12.4%	4.5%	-4.3%	-4.5%	-4.8%		
Units per Households (#)	1.34	1.22	1.10	1.13	1.16	1.18	-0.9%	
AGR	-9.4%	-9.4%	-9.5%	2.5%	2.7%	1.3%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	59.7%	59.6%	59.6%	53.6%	47.6%	42.3%	-17.4%	
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## Consumer Detachable

United States Consumer Detachable Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	16,901	18,674	17,453	23,512	24,194	24,818	7.4%	
AGR	6.2%	10.5%	-6.5%	34.7%	2.9%	2.6%		
Revenue (\$M)	11,430	13,702	14,984	19,954	20,299	20,703	10.9%	
AGR	6.2%	19.9%	9.4%	33.2%	1.7%	2.0%		
Average Price (\$)	676	734	859	849	839	834	3.3%	
AGR	-0.1%	8.5%	17.0%	-1.1%	-1.1%	-0.6%		
Installed Base (K)	61,894	68,173	72,941	81,613	88,878	94,746	8.6%	
AGR	6.9%	10.1%	7.0%	11.9%	8.9%	6.6%		
Removal Age (Y)	3.50	3.84	4.27	4.22	4.35	4.50	4.0%	
AGR	8.0%	9.6%	11.2%	-1.2%	3.1%	3.4%		
Average Installed Base Age (Y)	3.51	3.67	3.86	3.86	3.91	3.97	2.0%	
AGR	8.3%	4.6%	5.2%	0.1%	1.2%	1.5%		
Replacement Cycle Length (Y)	5.79	6.50	6.75	6.50	6.25	6.00	-2.0%	
AGR	-4.5%	12.2%	3.8%	-3.7%	-3.8%	-4.0%		
Units per Households (#)	2.36	2.37	2.38	2.39	2.40	2.41	0.4%	
AGR	5.6%	0.3%	0.4%	0.4%	0.4%	0.4%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	19.5%	21.2%	22.3%	24.6%	26.5%	27.9%	8.4%	
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## Consumer Total

United States Consumer Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	34,743	31,502	27,779	35,902	35,602	35,329	2.9%	
AGR	17.5%	-9.3%	-11.8%	29.2%	-0.8%	-0.8%		
Revenue (\$M)	14,794	16,327	17,456	23,036	23,247	23,526	9.6%	
AGR	8.4%	10.4%	6.9%	32.0%	0.9%	1.2%		
Average Price (\$)	426	518	628	642	653	666	6.5%	
AGR	-7.7%	21.7%	21.2%	2.1%	1.8%	2.0%		
Installed Base (K)	169,773	166,934	163,055	165,481	166,007	164,859	-0.3%	
AGR	-3.3%	-1.7%	-2.3%	1.5%	0.3%	-0.7%		
Removal Age (Y)	5.43	5.93	6.31	6.09	5.98	5.91	-0.1%	
AGR	0.7%	9.3%	6.4%	-3.4%	-1.9%	-1.2%		
Average Installed Base Age (Y)	4.74	4.81	4.89	4.79	4.72	4.67	-0.7%	
AGR	2.2%	1.4%	1.7%	-2.1%	-1.4%	-1.1%		
Replacement Cycle Length (Y)	5.18	5.86	6.15	5.94	5.73	5.52	-1.5%	
AGR	-5.4%	13.2%	4.9%	-3.4%	-3.5%	-3.7%		
Units per Households (#)	1.82	1.75	1.68	1.81	1.95	2.08	4.4%	
AGR	-4.4%	-3.8%	-4.0%	7.9%	7.8%	6.5%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	69.4%	70.2%	70.8%	65.9%	60.8%	56.2%	-13.2%	
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## Enterprise Slate

United States Enterprise Slate Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	1,309	1,193	736	812	717	634	-14.6%	
AGR	26.6%	-8.8%	-38.3%	10.3%	-11.7%	-11.5%		
Revenue (\$M)	534	528	382	424	377	336	-10.7%	
AGR	50.5%	-1.1%	-27.8%	11.1%	-11.1%	-10.9%		
Average Price (\$)	408	443	518	522	526	529	4.6%	
AGR	18.9%	8.5%	17.0%	0.7%	0.7%	0.7%		
Installed Base (K)	10,916	10,091	9,162	8,312	7,387	6,417	-10.7%	
AGR	-12.1%	-7.6%	-9.2%	-9.3%	-11.1%	-13.1%		
Removal Age (Y)	7.22	8.04	8.96	9.38	9.25	8.93	2.7%	
AGR	3.7%	11.3%	11.5%	4.7%	-1.4%	-3.5%		
Average Installed Base Age (Y)	6.22	6.32	6.51	6.50	6.48	6.48	0.6%	
AGR	3.7%	1.6%	3.1%	-0.2%	-0.3%	-0.1%		
Replacement Cycle Length (Y)	4.89	6.00	6.50	6.00	5.50	5.00	-4.5%	
AGR	-6.7%	22.7%	8.3%	-7.7%	-8.3%	-9.1%		
Units per Businesses (#)	5.80	4.96	4.14	3.47	2.86	2.31	-17.4%	
AGR	-19.6%	-14.5%	-16.6%	-16.1%	-17.7%	-19.3%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	29.7%	32.4%	35.3%	38.3%	41.3%	44.4%	14.7%	
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## Enterprise Detachable

United States Enterprise Detachable Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	3,805	4,457	3,382	4,179	4,123	4,071	-2.2%	
AGR	15.3%	17.1%	-24.1%	23.6%	-1.3%	-1.3%		
Revenue (\$M)	2,907	3,694	3,279	4,099	4,091	4,086	2.6%	
AGR	22.2%	27.1%	-11.2%	25.0%	-0.2%	-0.1%		
Average Price (\$)	764	829	970	981	992	1,004	4.9%	
AGR	6.0%	8.5%	17.0%	1.2%	1.2%	1.2%		
Installed Base (K)	10,314	12,661	13,574	14,794	15,478	15,639	5.4%	
AGR	10.3%	22.8%	7.2%	9.0%	4.6%	1.0%		
Removal Age (Y)	2.81	3.24	3.70	3.81	4.01	4.17	6.5%	
AGR	8.0%	15.2%	14.3%	3.0%	5.3%	3.9%		
Average Installed Base Age (Y)	3.22	3.25	3.54	3.69	3.86	4.03	5.5%	
AGR	7.3%	0.9%	8.9%	4.1%	4.6%	4.4%		
Replacement Cycle Length (Y)	4.63	7.00	6.50	6.00	5.50	5.00	-8.1%	
AGR	-4.4%	51.1%	-7.1%	-7.7%	-8.3%	-9.1%		
Units per Businesses (#)	10.77	10.57	9.07	8.06	6.96	5.92	-13.5%	
AGR	-13.5%	-1.9%	-14.2%	-11.2%	-13.6%	-15.0%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	15.1%	19.1%	23.8%	29.3%	35.5%	42.2%	27.1%	
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## Enterprise Total

United States Enterprise Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	5,114	5,650	4,118	4,991	4,840	4,705	-4.5%	
AGR	18.0%	10.5%	-27.1%	21.2%	-3.0%	-2.8%		
Revenue (\$M)	3,441	4,223	3,661	4,523	4,468	4,422	1.2%	
AGR	25.9%	22.7%	-13.3%	23.6%	-1.2%	-1.0%		
Average Price (\$)	673	747	889	906	923	940	5.9%	
AGR	6.7%	11.1%	19.0%	1.9%	1.9%	1.8%		
Installed Base (K)	21,230	22,752	22,736	23,106	22,865	22,056	-0.8%	
AGR	-2.4%	7.2%	-0.1%	1.6%	-1.0%	-3.5%		
Removal Age (Y)	4.80	5.29	5.75	5.69	5.57	5.43	0.6%	
AGR	0.3%	10.3%	8.6%	-1.0%	-2.2%	-2.6%		
Average Installed Base Age (Y)	4.49	4.41	4.55	4.54	4.57	4.63	1.2%	
AGR	2.3%	-1.8%	3.2%	-0.2%	0.7%	1.3%		
Replacement Cycle Length (Y)	4.76	6.51	6.50	6.00	5.50	5.00	-6.4%	
AGR	-6.0%	36.7%	-0.2%	-7.7%	-8.3%	-9.1%		
Units per Businesses (#)	8.99	8.92	8.20	7.73	7.11	6.41	-7.9%	
AGR	-10.9%	-0.8%	-8.1%	-5.7%	-8.0%	-9.9%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	37.3%	40.7%	44.2%	47.8%	51.3%	54.9%	17.6%	
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## Total Slate

United States Consumer & Enterprise Slate Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	19,151	14,022	11,061	13,203	12,125	11,146	-5.6%	
AGR	30.4%	-26.8%	-21.1%	19.4%	-8.2%	-8.1%		
Revenue (\$M)	3,899	3,153	2,853	3,506	3,325	3,159	0.0%	
AGR	20.7%	-19.1%	-9.5%	22.9%	-5.2%	-5.0%		
Average Price (\$)	204	225	258	266	274	283	5.9%	
AGR	-7.4%	10.5%	14.7%	2.9%	3.3%	3.3%		
Installed Base (K)	118,796	108,852	99,276	92,179	84,515	76,529	-8.4%	
AGR	-8.7%	-8.4%	-8.8%	-7.1%	-8.3%	-9.4%		
Removal Age (Y)	6.39	7.15	7.71	7.69	7.62	7.56	1.4%	
AGR	1.0%	11.9%	7.8%	-0.2%	-0.9%	-0.8%		
Average Installed Base Age (Y)	5.49	5.64	5.79	5.76	5.74	5.70	0.2%	
AGR	2.4%	2.7%	2.7%	-0.5%	-0.5%	-0.7%		
Replacement Cycle Length (Y)	4.89	5.54	5.81	5.54	5.27	5.00	-2.5%	
AGR	-6.5%	13.3%	4.8%	-4.6%	-4.9%	-5.1%		
Units per Households & Businesses (#)	1.45	1.31	1.18	1.20	1.22	1.23	-1.6%	
AGR	-9.9%	-9.4%	-9.8%	1.7%	1.8%	0.2%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	58.3%	58.4%	58.5%	53.0%	47.3%	42.4%	-16.0%	
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## Total Detachable

United States Consumer & Enterprise Detachable Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	20,706	23,131	20,835	27,690	28,317	28,889	5.7%	
AGR	7.8%	11.7%	-9.9%	32.9%	2.3%	2.0%		
Revenue (\$M)	14,336	17,396	18,263	24,053	24,390	24,789	9.3%	
AGR	9.1%	21.3%	5.0%	31.7%	1.4%	1.6%		
Average Price (\$)	692	752	877	869	861	858	3.4%	
AGR	1.2%	8.6%	16.6%	-0.9%	-0.8%	-0.4%		
Installed Base (K)	72,208	80,833	86,515	96,408	104,356	110,386	8.1%	
AGR	7.4%	11.9%	7.0%	11.4%	8.2%	5.8%		
Removal Age (Y)	3.35	3.71	4.15	4.14	4.29	4.43	4.5%	
AGR	8.3%	10.8%	11.8%	-0.3%	3.6%	3.4%		
Average Installed Base Age (Y)	3.44	3.59	3.80	3.83	3.90	3.98	2.6%	
AGR	8.5%	4.2%	5.9%	0.8%	1.7%	1.9%		
Replacement Cycle Length (Y)	5.58	6.57	6.71	6.42	6.12	5.83	-3.0%	
AGR	-4.5%	17.7%	2.1%	-4.4%	-4.6%	-4.8%		
Units per Households & Businesses (#)	2.66	2.70	2.69	2.68	2.66	2.63	-0.6%	
AGR	5.3%	1.4%	-0.2%	-0.5%	-0.8%	-1.0%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	19.3%	21.1%	22.4%	24.9%	26.9%	28.5%	9.2%	
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## Total Tablets

United States Consumer & Enterprise Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	39,856	37,153	31,897	40,893	40,442	40,035	1.9%	
AGR	17.6%	-6.8%	-14.1%	28.2%	-1.1%	-1.0%		
Revenue (\$M)	18,235	20,550	21,117	27,559	27,715	27,948	8.0%	
AGR	11.4%	12.7%	2.8%	30.5%	0.6%	0.8%		
Average Price (\$)	458	553	662	674	685	698	6.0%	
AGR	-5.3%	20.9%	19.7%	1.8%	1.7%	1.9%		
Installed Base (K)	191,003	189,686	185,791	188,587	188,871	186,915	-0.4%	
AGR	-3.2%	-0.7%	-2.1%	1.5%	0.2%	-1.0%		
Removal Age (Y)	5.34	5.84	6.23	6.04	5.92	5.84	0.0%	
AGR	0.6%	9.4%	6.7%	-3.1%	-1.9%	-1.4%		
Average Installed Base Age (Y)	4.71	4.76	4.85	4.76	4.70	4.67	-0.5%	
AGR	2.2%	1.1%	1.9%	-1.9%	-1.1%	-0.8%		
Replacement Cycle Length (Y)	5.13	5.93	6.19	5.95	5.70	5.45	-2.1%	
AGR	-5.5%	15.6%	4.4%	-3.9%	-4.2%	-4.4%		
Units per Households & Businesses (#)	2.00	1.94	1.86	2.00	2.14	2.26	3.9%	
AGR	-4.5%	-3.0%	-3.9%	7.5%	7.1%	5.5%		
Market Penetration (%)	68.0%	68.9%	69.6%	65.2%	60.4%	56.2%	-11.8%	
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## Mobile Phones

### Consumer Standard

United States Consumer Standard Phones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	4,436	3,609	2,997	3,845	3,741	3,650	0.3%	
AGR	-12.5%	-18.6%	-17.0%	28.3%	-2.7%	-2.4%		
Revenue (\$M)	276	242	232	261	224	192	-5.6%	
AGR	-21.0%	-12.4%	-4.2%	12.9%	-14.4%	-14.2%		
Average Price (\$)	62	67	77	68	60	53	-5.8%	
AGR	-9.8%	7.7%	15.4%	-12.0%	-12.0%	-12.0%		
Installed Base (K)	69,656	53,580	42,059	34,937	30,566	26,343	-16.3%	
AGR	-22.5%	-23.1%	-21.5%	-16.9%	-12.5%	-13.8%		
Removal Age (Y)	12.59	12.56	12.27	11.31	10.35	10.48	-4.4%	
AGR	1.6%	-0.2%	-2.4%	-7.8%	-8.5%	1.2%		
Average Installed Base Age (Y)	9.57	9.19	8.81	8.37	8.09	7.56	-4.8%	
AGR	-2.6%	-4.0%	-4.1%	-5.0%	-3.4%	-6.6%		
Replacement Cycle Length (Y)	3.82	3.72	3.90	4.19	4.77	4.35	4.0%	
AGR	-10.1%	-2.7%	4.7%	7.4%	13.9%	-8.9%		
Units per Households (#)	5.04	4.66	4.43	4.47	4.76	5.00	1.7%	
AGR	-7.2%	-7.4%	-5.0%	0.8%	6.5%	5.1%		
Market Penetration (%)	10.3%	8.4%	6.9%	5.6%	4.6%	3.7%	-6.5%	
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## Enterprise Standard

United States Enterprise Standard Phones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	127	104	86	110	107	105	0.3%	
AGR	-12.5%	-18.6%	-17.0%	28.3%	-2.7%	-2.4%		
Revenue (\$M)	21	19	18	20	17	15	-5.6%	
AGR	-21.0%	-12.4%	-4.2%	12.9%	-14.4%	-14.2%		
Average Price (\$)	168	181	209	184	162	142	-5.8%	
AGR	-9.8%	7.7%	15.4%	-12.0%	-12.0%	-12.0%		
Installed Base (K)	4,596	3,445	2,366	1,223	833	663	-33.8%	
AGR	-33.8%	-25.0%	-31.3%	-48.3%	-31.9%	-20.4%		
Removal Age (Y)	13.86	13.39	13.78	14.01	12.76	11.17	-4.4%	
AGR	1.6%	-3.3%	2.9%	1.6%	-8.9%	-12.4%		
Average Installed Base Age (Y)	11.22	11.46	11.39	9.71	8.23	7.13	-11.2%	
AGR	-1.1%	2.1%	-0.6%	-14.8%	-15.2%	-13.4%		
Replacement Cycle Length (Y)	2.86	3.75	3.03	1.98	2.67	3.42	-2.3%	
AGR	-15.5%	30.9%	-19.1%	-34.8%	35.2%	27.8%		
Units per Businesses (#)	39.76	42.80	41.81	30.90	30.00	34.07	-5.5%	
AGR	-5.9%	7.6%	-2.3%	-26.1%	-2.9%	13.6%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	1.8%	1.3%	0.9%	0.6%	0.4%	0.3%	-1.5%	
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## Total Standard

United States Consumer & Enterprise Standard Phones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	4,563	3,713	3,083	3,955	3,848	3,755	0.3%	
AGR	-12.5%	-18.6%	-17.0%	28.3%	-2.7%	-2.4%		
Revenue (\$M)	297	260	250	282	241	207	-5.6%	
AGR	-21.0%	-12.4%	-4.2%	12.9%	-14.4%	-14.2%		
Average Price (\$)	65	70	81	71	63	55	-5.8%	
AGR	-9.8%	7.7%	15.4%	-12.0%	-12.0%	-12.0%		
Installed Base (K)	74,252	57,025	44,425	36,160	31,399	27,006	-17.0%	
AGR	-23.3%	-23.2%	-22.1%	-18.6%	-13.2%	-14.0%		
Removal Age (Y)	12.71	12.61	12.38	11.62	10.50	10.49	-4.5%	
AGR	1.6%	-0.8%	-1.8%	-6.1%	-9.7%	-0.1%		
Average Installed Base Age (Y)	9.67	9.33	8.96	8.41	8.09	7.54	-5.2%	
AGR	-2.6%	-3.5%	-4.0%	-6.1%	-3.9%	-6.8%		
Replacement Cycle Length (Y)	3.74	3.72	3.83	3.96	4.65	4.31	3.8%	
AGR	-10.4%	-0.4%	2.9%	3.3%	17.4%	-7.2%		
Units per Households & Businesses (#)	5.33	4.93	4.65	4.60	4.86	5.11	0.9%	
AGR	-8.0%	-7.4%	-5.6%	-1.1%	5.8%	5.0%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	9.9%	8.1%	6.7%	5.4%	4.4%	3.6%	-6.3%	
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## Consumer Smartphone

United States Consumer SmartPhones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	116,457	104,823	89,413	117,429	116,622	115,905	2.5%	
AGR	-2.0%	-10.0%	-14.7%	31.3%	-0.7%	-0.6%		
Revenue (\$M)	92,683	89,993	88,585	127,061	137,814	149,586	13.5%	
AGR	-4.5%	-2.9%	-1.6%	43.4%	8.5%	8.5%		
Average Price (\$)	796	859	991	1,082	1,182	1,291	10.7%	
AGR	-2.5%	7.9%	15.4%	9.2%	9.2%	9.2%		
Installed Base (K)	540,655	530,477	510,122	505,218	497,089	489,284	-2.0%	
AGR	0.1%	-1.9%	-3.8%	-1.0%	-1.6%	-1.6%		
Removal Age (Y)	4.52	5.17	5.78	5.37	5.64	5.63	2.2%	
AGR	7.9%	14.4%	11.8%	-7.1%	5.0%	-0.1%		
Average Installed Base Age (Y)	5.81	6.01	6.22	6.23	6.17	6.09	0.3%	
AGR	4.3%	3.6%	3.5%	0.0%	-1.0%	-1.2%		
Replacement Cycle Length (Y)	5.65	5.61	5.65	5.13	4.98	4.96	-3.1%	
AGR	-1.1%	-0.7%	0.6%	-9.2%	-2.8%	-0.6%		
Units per Households (#)	4.27	4.09	3.86	3.76	3.64	3.53	-3.6%	
AGR	-2.7%	-4.1%	-5.7%	-2.6%	-3.1%	-2.9%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	94.2%	95.4%	96.3%	97.1%	97.7%	98.2%	4.0%	
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## Enterprise Smartphone

United States Enterprise SmartPhones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	11,610	10,388	8,901	11,737	11,697	11,661	2.9%	
AGR	-0.8%	-10.5%	-14.3%	31.9%	-0.3%	-0.3%		
Revenue (\$M)	10,344	9,970	9,859	14,205	15,471	16,855	14.0%	
AGR	-3.8%	-3.6%	-1.1%	44.1%	8.9%	8.9%		
Average Price (\$)	891	960	1,108	1,210	1,323	1,445	10.8%	
AGR	-3.0%	7.7%	15.4%	9.3%	9.3%	9.3%		
Installed Base (K)	48,447	46,533	44,269	43,810	43,756	43,710	-1.6%	
AGR	-4.1%	-4.0%	-4.9%	-1.0%	-0.1%	-0.1%		
Removal Age (Y)	6.07	5.83	5.94	5.20	4.85	4.84	-4.6%	
AGR	-1.0%	-3.9%	1.9%	-12.5%	-6.7%	-0.3%		
Average Installed Base Age (Y)	5.94	5.90	5.96	5.85	5.82	5.80	-0.4%	
AGR	-2.8%	-0.6%	0.9%	-1.8%	-0.5%	-0.4%		
Replacement Cycle Length (Y)	4.54	4.78	4.96	4.59	4.72	4.73	-0.3%	
AGR	-1.7%	5.3%	3.8%	-7.5%	2.9%	0.2%		
Units per Businesses (#)	62.67	73.01	83.67	100.41	121.59	147.53	19.2%	
AGR	14.8%	16.5%	14.6%	20.0%	21.1%	21.3%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	12.2%	10.2%	8.4%	7.0%	5.7%	4.7%	-7.5%	
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## Total Smartphone

United States Consumer & Enterprise SmartPhones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	128,068	115,211	98,315	129,165	128,319	127,566	2.6%	
AGR	-1.9%	-10.0%	-14.7%	31.4%	-0.7%	-0.6%		
Revenue (\$M)	103,027	99,963	98,444	141,266	153,285	166,441	13.6%	
AGR	-4.4%	-3.0%	-1.5%	43.5%	8.5%	8.6%		
Average Price (\$)	804	868	1,001	1,094	1,195	1,305	10.7%	
AGR	-2.6%	7.9%	15.4%	9.2%	9.2%	9.2%		
Installed Base (K)	589,102	577,010	554,391	549,028	540,845	532,994	-2.0%	
AGR	-0.3%	-2.1%	-3.9%	-1.0%	-1.5%	-1.5%		
Removal Age (Y)	4.69	5.24	5.79	5.35	5.57	5.56	1.5%	
AGR	6.5%	11.7%	10.7%	-7.6%	4.0%	-0.1%		
Average Installed Base Age (Y)	5.82	6.00	6.20	6.20	6.14	6.07	0.3%	
AGR	3.6%	3.2%	3.3%	-0.1%	-1.0%	-1.1%		
Replacement Cycle Length (Y)	5.54	5.53	5.58	5.08	4.96	4.94	-2.8%	
AGR	-1.1%	-0.1%	0.9%	-9.0%	-2.3%	-0.5%		
Units per Households & Businesses (#)	4.62	4.43	4.18	4.07	3.95	3.84	-3.5%	
AGR	-2.9%	-4.2%	-5.7%	-2.6%	-2.9%	-2.8%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	90.5%	91.6%	92.5%	93.2%	93.8%	94.2%	3.7%	
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## Consumer Total

United States Consumer Mobile Phones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	120,893	108,432	92,410	121,274	120,363	119,555	2.5%	
AGR	-2.5%	-10.3%	-14.8%	31.2%	-0.8%	-0.7%		
Revenue (\$M)	92,958	90,235	88,817	127,322	138,038	149,778	13.5%	
AGR	-4.6%	-2.9%	-1.6%	43.4%	8.4%	8.5%		
Average Price (\$)	769	832	961	1,050	1,147	1,253	10.8%	
AGR	-2.2%	8.2%	15.5%	9.2%	9.2%	9.2%		
Installed Base (K)	610,311	584,057	552,181	540,155	527,655	515,627	-3.1%	
AGR	-3.2%	-4.3%	-5.5%	-2.2%	-2.3%	-2.3%		
Removal Age (Y)	5.79	6.16	6.49	5.87	5.99	5.95	-0.9%	
AGR	2.6%	6.3%	5.3%	-9.5%	2.0%	-0.7%		
Average Installed Base Age (Y)	6.23	6.32	6.45	6.39	6.29	6.17	-0.6%	
AGR	1.5%	1.4%	2.0%	-0.9%	-1.6%	-1.8%		
Replacement Cycle Length (Y)	5.33	5.34	5.44	5.05	4.97	4.92	-2.0%	
AGR	-1.9%	0.1%	2.0%	-7.2%	-1.6%	-1.1%		
Units per Households (#)	4.58	4.33	4.04	3.91	3.78	3.66	-4.1%	
AGR	-4.6%	-5.6%	-6.5%	-3.2%	-3.3%	-3.2%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	99.1%	99.3%	99.5%	99.6%	99.7%	99.8%	0.7%	
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## Enterprise Total

United States Enterprise Mobile Phones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	11,738	10,492	8,987	11,847	11,804	11,766	2.9%	
AGR	-0.9%	-10.6%	-14.3%	31.8%	-0.4%	-0.3%		
Revenue (\$M)	10,365	9,989	9,877	14,226	15,488	16,870	14.0%	
AGR	-3.8%	-3.6%	-1.1%	44.0%	8.9%	8.9%		
Average Price (\$)	883	952	1,099	1,201	1,312	1,434	10.8%	
AGR	-2.9%	7.8%	15.4%	9.3%	9.3%	9.3%		
Installed Base (K)	53,043	49,978	46,635	45,034	44,589	44,373	-2.9%	
AGR	-7.7%	-5.8%	-6.7%	-3.4%	-1.0%	-0.5%		
Removal Age (Y)	7.18	6.56	6.64	5.93	5.18	5.01	-6.5%	
AGR	-2.4%	-8.7%	1.3%	-10.7%	-12.6%	-3.2%		
Average Installed Base Age (Y)	6.39	6.27	6.23	5.98	5.89	5.84	-1.8%	
AGR	-4.8%	-1.8%	-0.7%	-4.0%	-1.5%	-0.9%		
Replacement Cycle Length (Y)	4.28	4.69	4.78	4.35	4.64	4.70	0.1%	
AGR	-2.8%	9.4%	2.0%	-9.1%	6.7%	1.4%		
Units per Businesses (#)	63.84	73.76	83.66	98.73	119.31	145.00	18.4%	
AGR	11.9%	15.5%	13.4%	18.0%	20.8%	21.5%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	13.1%	10.8%	8.9%	7.3%	6.0%	4.9%	-8.2%	
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## Total Mobile Phones

United States Consumer & Enterprise Mobile Phones								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	132,631	118,923	101,397	133,120	132,167	131,321	2.5%	
AGR	-2.3%	-10.3%	-14.7%	31.3%	-0.7%	-0.6%		
Revenue (\$M)	103,324	100,224	98,694	141,547	153,526	166,648	13.6%	
AGR	-4.5%	-3.0%	-1.5%	43.4%	8.5%	8.5%		
Average Price (\$)	779	843	973	1,063	1,162	1,269	10.8%	
AGR	-2.2%	8.2%	15.5%	9.2%	9.2%	9.2%		
Installed Base (K)	663,354	634,036	598,816	585,188	572,244	560,000	-3.1%	
AGR	-3.5%	-4.4%	-5.6%	-2.3%	-2.2%	-2.1%		
Removal Age (Y)	5.95	6.20	6.50	5.88	5.92	5.86	-1.4%	
AGR	1.9%	4.3%	4.9%	-9.6%	0.6%	-0.9%		
Average Installed Base Age (Y)	6.24	6.31	6.43	6.36	6.25	6.14	-0.7%	
AGR	0.9%	1.2%	1.8%	-1.2%	-1.6%	-1.8%		
Replacement Cycle Length (Y)	5.23	5.28	5.38	4.99	4.94	4.90	-1.8%	
AGR	-1.9%	1.0%	2.0%	-7.3%	-0.9%	-0.9%		
Units per Households & Businesses (#)	4.71	4.46	4.17	4.04	3.92	3.80	-3.9%	
AGR	-4.6%	-5.4%	-6.4%	-3.1%	-3.1%	-3.0%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	
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# Market Aggregations

## Total PCs (Desktop and Mobile)

### Consumer PCs

United States Consumer Total PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	27,671	21,823	19,940	26,045	26,374	26,729	5.2%	
AGR	2.7%	-21.1%	-8.6%	30.6%	1.3%	1.3%		
Revenue (\$M)	32,856	28,030	29,743	40,506	42,815	45,344	12.8%	
AGR	6.7%	-14.7%	6.1%	36.2%	5.7%	5.9%		
Average Price (\$)	1,187	1,284	1,492	1,555	1,623	1,696	7.2%	
AGR	3.9%	8.2%	16.1%	4.3%	4.4%	4.5%		
Installed Base (K)	116,743	114,942	113,558	115,931	116,296	114,666	-0.1%	
AGR	-1.2%	-1.5%	-1.2%	2.1%	0.3%	-1.4%		
Removal Age (Y)	4.76	5.31	5.70	5.56	5.52	5.43	0.6%	
AGR	1.9%	11.5%	7.4%	-2.4%	-0.8%	-1.6%		
Average Installed Base Age (Y)	4.31	4.49	4.67	4.64	4.61	4.58	0.5%	
AGR	2.7%	4.2%	3.8%	-0.6%	-0.5%	-0.7%		
Replacement Cycle Length (Y)	5.02	5.87	6.33	5.90	5.47	5.04	-3.7%	
AGR	-3.0%	16.9%	7.8%	-6.8%	-7.2%	-7.8%		
Units per Households (#)	1.12	1.07	1.03	1.02	1.00	1.00	-1.7%	
AGR	-4.5%	-4.7%	-4.0%	-0.7%	-1.9%			
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	77.4%	79.0%	80.6%	82.1%	83.2%	81.3%	3.9%	
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### Enterprise PCs

United States Enterprise Total PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	38,454	35,700	31,274	41,386	42,430	43,496	5.1%	
AGR	3.8%	-7.2%	-12.4%	32.3%	2.5%	2.5%		
Revenue (\$M)	28,599	28,680	29,117	40,244	43,151	46,320	12.7%	
AGR	12.3%	0.3%	1.5%	38.2%	7.2%	7.3%		
Average Price (\$)	744	803	931	972	1,017	1,065	7.3%	
AGR	8.2%	8.0%	15.9%	4.4%	4.6%	4.7%		
Installed Base (K)	138,929	144,380	146,878	155,174	159,424	161,741	2.9%	
AGR	2.3%	3.9%	1.7%	5.6%	2.7%	1.5%		
Removal Age (Y)	4.46	4.81	5.10	4.87	4.77	4.69	-0.6%	
AGR	0.5%	7.6%	6.1%	-4.5%	-2.1%	-1.6%		
Average Installed Base Age (Y)	4.10	4.15	4.28	4.22	4.21	4.21	0.3%	
AGR	0.7%	1.2%	3.0%	-1.3%	-0.4%	0.0%		
Replacement Cycle Length (Y)	4.93	5.77	6.10	5.69	5.18	4.93	-3.9%	
AGR	-1.1%	17.0%	5.7%	-6.8%	-9.0%	-4.8%		
Units per Businesses (#)	21.93	23.02	23.40	24.79	25.47	25.82	2.9%	
AGR	2.4%	5.0%	1.7%	5.9%	2.7%	1.4%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	
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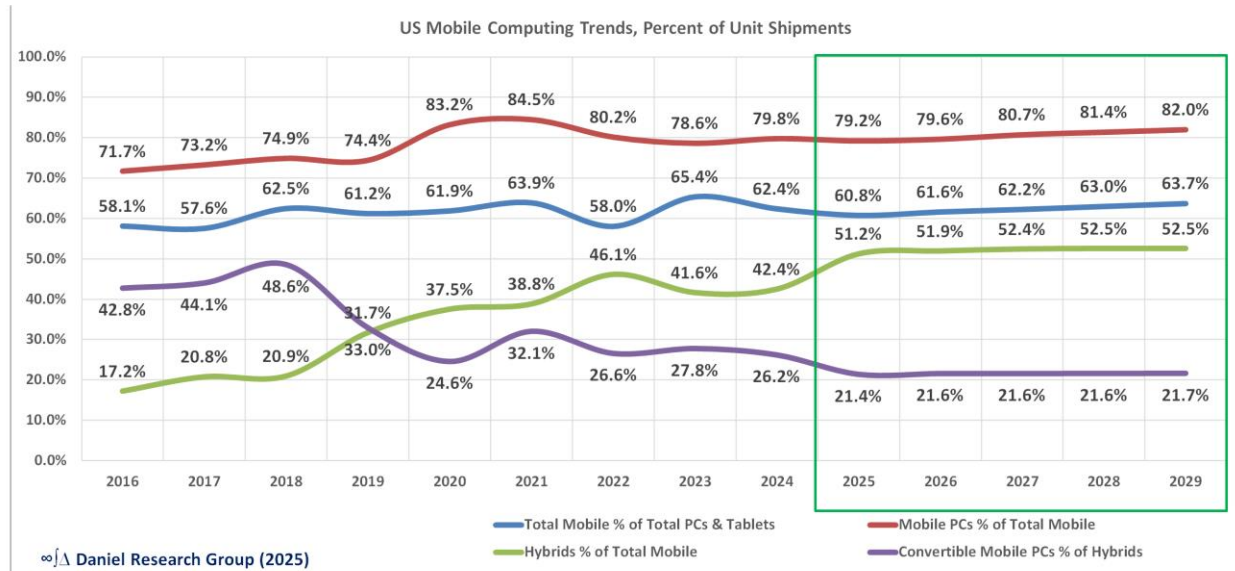
## Total PCs

United States Consumer & Enterprise Total PCs								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	66,125	57,523	51,215	67,431	68,805	70,225	5.1%	
AGR	3.4%	-13.0%	-11.0%	31.7%	2.0%	2.1%		
Revenue (\$M)	61,455	56,710	58,860	80,750	85,966	91,664	12.8%	
AGR	9.3%	-7.7%	3.8%	37.2%	6.5%	6.6%		
Average Price (\$)	929	986	1,149	1,198	1,249	1,305	7.3%	
AGR	5.7%	6.1%	16.6%	4.2%	4.3%	4.5%		
Installed Base (K)	255,672	259,322	260,436	271,105	275,720	276,407	1.6%	
AGR	0.7%	1.4%	0.4%	4.1%	1.7%	0.2%		
Removal Age (Y)	4.59	5.02	5.35	5.16	5.07	4.99	-0.1%	
AGR	1.1%	9.4%	6.7%	-3.6%	-1.6%	-1.7%		
Average Installed Base Age (Y)	4.19	4.30	4.44	4.40	4.37	4.36	0.4%	
AGR	1.7%	2.5%	3.4%	-1.0%	-0.5%	-0.3%		
Replacement Cycle Length (Y)	4.97	5.81	6.20	5.78	5.30	4.97	-3.8%	
AGR	-2.0%	16.9%	6.6%	-6.8%	-8.3%	-6.1%		
Units per Households & Businesses (#)	2.32	2.28	2.23	2.26	2.25	2.29	0.1%	
AGR	-2.5%	-1.5%	-2.3%	1.4%	-0.4%	1.6%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	78.4%	80.0%	81.5%	82.9%	83.9%	82.1%	3.7%	

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## Mobile PCs and Tablets

### Mobile Trends



## Consumer

United States Consumer Mobile PCs & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	56,692	48,792	43,775	57,153	57,363	57,618	4.2%	
AGR	12.2%	-13.9%	-10.3%	30.6%	0.4%	0.4%		
Revenue (\$M)	40,729	38,542	41,533	56,693	59,505	62,592	12.9%	
AGR	9.6%	-5.4%	7.8%	36.5%	5.0%	5.2%		
Average Price (\$)	718	790	949	992	1,037	1,086	8.3%	
AGR	-2.4%	10.0%	20.1%	4.5%	4.6%	4.7%		
Installed Base (K)	270,180	266,223	261,628	266,578	268,040	266,165	0.0%	
AGR	-2.5%	-1.5%	-1.7%	1.9%	0.5%	-0.7%		
Removal Age (Y)	5.24	5.80	6.20	6.02	5.93	5.86	0.3%	
AGR	1.4%	10.5%	6.9%	-2.8%	-1.5%	-1.3%		
Average Installed Base Age (Y)	4.61	4.73	4.85	4.78	4.72	4.67	-0.3%	
AGR	2.6%	2.6%	2.6%	-1.5%	-1.1%	-1.1%		
Replacement Cycle Length (Y)	5.25	6.05	6.41	6.11	5.79	5.47	-2.5%	
AGR	-4.9%	15.2%	6.0%	-4.7%	-5.1%	-5.5%		
Units per Households (#)	2.02	1.96	1.91	1.93	1.92	1.89	-1.0%	
AGR	-3.8%	-2.7%	-2.7%	0.9%	-0.4%	-1.6%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	99.6%	99.7%	99.8%	99.9%	99.9%	99.9%	0.3%	
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## Enterprise

United States Enterprise Mobile PCs & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	35,912	33,922	28,906	38,179	39,068	40,000	4.2%	
AGR	6.6%	-5.5%	-14.8%	32.1%	2.3%	2.4%		
Revenue (\$M)	26,000	26,692	26,703	37,169	40,098	43,300	12.9%	
AGR	16.9%	2.7%	0.0%	39.2%	7.9%	8.0%		
Average Price (\$)	724	787	924	974	1,026	1,083	8.3%	
AGR	9.7%	8.7%	17.4%	5.4%	5.4%	5.5%		
Installed Base (K)	135,142	142,797	146,046	154,455	158,803	161,163	3.1%	
AGR	3.4%	5.7%	2.3%	5.8%	2.8%	1.5%		
Removal Age (Y)	4.45	4.88	5.24	5.08	5.00	4.95	0.4%	
AGR	1.1%	9.7%	7.3%	-2.9%	-1.6%	-1.0%		
Average Installed Base Age (Y)	4.07	4.14	4.30	4.28	4.29	4.30	1.0%	
AGR	1.6%	1.7%	4.0%	-0.5%	0.2%	0.3%		
Replacement Cycle Length (Y)	5.29	6.44	6.69	6.19	5.57	5.28	-4.8%	
AGR	-2.7%	21.7%	4.0%	-7.5%	-9.9%	-5.2%		
Units per Businesses (#)	21.39	22.82	23.30	24.70	25.39	25.74	3.1%	
AGR	3.4%	6.7%	2.1%	6.0%	2.8%	1.4%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	99.7%	99.8%	99.8%	99.9%	99.9%	99.9%	0.2%	
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## Total Mobile PCs and Tablets

United States Consumer & Enterprise Mobile PCs & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	92,604	82,714	72,681	95,332	96,431	97,617	4.2%	
AGR	10.0%	-10.7%	-12.1%	31.2%	1.2%	1.2%		
Revenue (\$M)	66,728	65,233	68,237	93,862	99,603	105,892	12.9%	
AGR	12.3%	-2.2%	4.6%	37.6%	6.1%	6.3%		
Average Price (\$)	721	789	939	985	1,033	1,085	8.3%	
AGR	2.1%	9.4%	19.0%	4.9%	4.9%	5.0%		
Installed Base (K)	405,321	409,021	407,674	421,033	426,843	427,328	1.1%	
AGR	-0.6%	0.9%	-0.3%	3.3%	1.4%	0.1%		
Removal Age (Y)	4.94	5.45	5.83	5.66	5.57	5.50	0.2%	
AGR	1.3%	10.2%	7.0%	-2.9%	-1.6%	-1.3%		
Average Installed Base Age (Y)	4.41	4.51	4.65	4.59	4.56	4.53	0.1%	
AGR	2.3%	2.3%	3.0%	-1.2%	-0.7%	-0.6%		
Replacement Cycle Length (Y)	5.26	6.18	6.51	6.14	5.71	5.40	-3.3%	
AGR	-4.2%	17.4%	5.4%	-5.7%	-6.9%	-5.4%		
Units per Households & Businesses (#)	2.89	2.88	2.85	2.91	2.92	2.90	0.2%	
AGR	-1.9%	-0.2%	-1.3%	2.3%	0.5%	-0.8%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	99.6%	99.7%	99.8%	99.9%	99.9%	99.9%	0.3%	

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

### Consumer

United States Consumer 2-in-1 Hybrid PC & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	19,249	20,374	18,948	25,421	26,069	26,658	7.0%	
AGR	5.7%	5.8%	-7.0%	34.2%	2.6%	2.3%		
Revenue (\$M)	13,553	15,370	16,700	22,397	22,973	23,628	11.3%	
AGR	10.0%	13.4%	8.6%	34.1%	2.6%	2.9%		
Average Price (\$)	704	754	881	881	881	886	4.1%	
AGR	4.0%	7.1%	16.8%	0.0%	0.0%	0.6%		
Installed Base (K)	70,894	76,927	81,482	90,164	97,219	102,665	7.5%	
AGR	5.6%	8.5%	5.9%	10.7%	7.8%	5.6%		
Removal Age (Y)	3.61	3.99	4.41	4.35	4.47	4.59	3.6%	
AGR	7.3%	10.4%	10.6%	-1.3%	2.6%	2.9%		
Average Installed Base Age (Y)	3.60	3.76	3.95	3.95	3.98	4.03	1.7%	
AGR	7.5%	4.4%	5.0%	-0.1%	0.9%	1.2%		
Replacement Cycle Length (Y)	5.57	6.36	6.66	6.39	6.11	5.84	-2.1%	
AGR	-4.0%	14.3%	4.7%	-4.1%	-4.3%	-4.5%		
Units per Households (#)	2.31	2.34	2.37	2.39	2.40	2.41	0.8%	
AGR	4.9%	1.1%	1.3%	1.0%	0.6%	0.3%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	22.8%	24.2%	25.1%	27.3%	28.9%	30.2%	7.4%	

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## Enterprise

United States Enterprise 2-in-1 Hybrid PC & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	8,821	9,061	7,631	9,905	10,063	10,227	3.1%	
AGR	5.0%	2.7%	-15.8%	29.8%	1.6%	1.6%		
Revenue (\$M)	6,472	7,246	7,114	9,520	9,990	10,500	9.7%	
AGR	20.2%	11.9%	-1.8%	33.8%	4.9%	5.1%		
Average Price (\$)	734	800	932	961	993	1,027	6.4%	
AGR	14.4%	9.0%	16.6%	3.1%	3.3%	3.4%		
Installed Base (K)	26,281	29,803	31,077	33,377	33,870	34,732	3.9%	
AGR	6.3%	13.4%	4.3%	7.4%	1.5%	2.5%		
Removal Age (Y)	3.00	3.50	3.88	3.90	3.93	4.11	4.1%	
AGR	9.8%	16.7%	10.9%	0.4%	0.7%	4.6%		
Average Installed Base Age (Y)	3.36	3.49	3.76	3.84	3.96	4.02	3.6%	
AGR	8.6%	4.1%	7.6%	2.1%	3.0%	1.6%		
Replacement Cycle Length (Y)	4.61	6.38	5.89	5.39	4.54	4.71	-7.3%	
AGR	-2.9%	38.3%	-7.7%	-8.5%	-15.8%	3.7%		
Units per Businesses (#)	4.23	4.79	4.97	5.34	5.41	5.55	3.7%	
AGR	3.1%	13.2%	3.7%	7.5%	1.4%	2.4%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	98.1%	99.3%	99.7%	99.9%	100.0%	100.0%	1.9%	
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## Total Hybrids

United States Consumer & Enterprise 2-in-1 Hybrid PC & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	28,069	29,435	26,579	35,325	36,132	36,885	5.8%	
AGR	5.5%	4.9%	-9.7%	32.9%	2.3%	2.1%		
Revenue (\$M)	20,025	22,616	23,814	31,917	32,964	34,129	10.8%	
AGR	13.1%	12.9%	5.3%	34.0%	3.3%	3.5%		
Average Price (\$)	713	768	896	904	912	925	4.8%	
AGR	7.2%	7.7%	16.6%	0.8%	1.0%	1.4%		
Installed Base (K)	97,175	106,731	112,559	123,541	131,088	137,397	6.5%	
AGR	5.7%	9.8%	5.5%	9.8%	6.1%	4.8%		
Removal Age (Y)	3.40	3.82	4.23	4.20	4.29	4.44	3.8%	
AGR	8.2%	12.4%	10.7%	-0.7%	2.0%	3.5%		
Average Installed Base Age (Y)	3.52	3.68	3.89	3.91	3.97	4.02	2.3%	
AGR	8.0%	4.5%	5.8%	0.6%	1.5%	1.3%		
Replacement Cycle Length (Y)	5.26	6.37	6.42	6.07	5.59	5.49	-3.6%	
AGR	-3.7%	21.0%	0.9%	-5.4%	-8.0%	-1.7%		
Units per Households & Businesses (#)	2.63	2.73	2.77	2.81	2.81	2.81	0.8%	
AGR	4.7%	3.5%	1.5%	1.5%	-0.1%	0.2%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	26.2%	27.5%	28.4%	30.4%	32.0%	33.2%	7.0%	
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## Total PCs and Tablets Consumer

United States Consumer PCs & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	62,413	53,326	47,719	61,947	61,977	62,059	3.9%	
AGR	10.5%	-14.6%	-10.5%	29.8%	0.0%	0.1%		
Revenue (\$M)	47,651	44,357	47,199	63,542	66,062	68,870	11.6%	
AGR	7.2%	-6.9%	6.4%	34.6%	4.0%	4.2%		
Average Price (\$)	763	832	989	1,026	1,066	1,110	7.5%	
AGR	-2.9%	9.0%	18.9%	3.7%	3.9%	4.1%		
Installed Base (K)	286,516	281,876	276,613	281,413	282,302	279,524	-0.2%	
AGR	-2.5%	-1.6%	-1.9%	1.7%	0.3%	-1.0%		
Removal Age (Y)	5.15	5.67	6.05	5.86	5.78	5.70	0.2%	
AGR	1.1%	10.1%	6.7%	-3.0%	-1.4%	-1.4%		
Average Installed Base Age (Y)	4.56	4.67	4.80	4.73	4.68	4.63	-0.2%	
AGR	2.3%	2.5%	2.6%	-1.5%	-1.0%	-0.9%		
Replacement Cycle Length (Y)	5.11	5.86	6.22	5.92	5.62	5.31	-2.4%	
AGR	-4.4%	14.7%	6.1%	-4.8%	-5.1%	-5.5%		
Units per Households (#)	2.13	2.07	2.02	2.03	2.02	1.98	-1.1%	
AGR	-3.6%	-2.7%	-2.8%	0.8%	-0.6%	-1.9%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	
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## Enterprise

United States Enterprise PCs & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	43,568	41,350	35,392	46,377	47,270	48,201	3.9%	
AGR	5.3%	-5.1%	-14.4%	31.0%	1.9%	2.0%		
Revenue (\$M)	32,040	32,903	32,778	44,767	47,619	50,742	11.4%	
AGR	13.7%	2.7%	-0.4%	36.6%	6.4%	6.6%		
Average Price (\$)	735	796	926	965	1,007	1,053	7.2%	
AGR	7.9%	8.2%	16.4%	4.2%	4.4%	4.5%		
Installed Base (K)	160,160	167,132	169,614	178,280	182,289	183,797	2.4%	
AGR	1.7%	4.4%	1.5%	5.1%	2.2%	0.8%		
Removal Age (Y)	4.51	4.87	5.18	4.97	4.86	4.78	-0.5%	
AGR	0.4%	8.0%	6.4%	-4.1%	-2.1%	-1.7%		
Average Installed Base Age (Y)	4.15	4.18	4.31	4.26	4.25	4.26	0.4%	
AGR	0.9%	0.8%	3.1%	-1.1%	-0.2%	0.1%		
Replacement Cycle Length (Y)	4.91	5.86	6.15	5.73	5.21	4.94	-4.2%	
AGR	-1.8%	19.4%	5.0%	-6.9%	-9.0%	-5.3%		
Units per Businesses (#)	25.28	26.65	27.02	28.48	29.12	29.34	2.4%	
AGR	1.8%	5.4%	1.4%	5.4%	2.2%	0.8%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	
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## Total PCs and Tablets

United States Consumer & Enterprise PCs & Tablets								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	105,981	94,676	83,111	108,324	109,247	110,260	3.9%	
AGR	8.3%	-10.7%	-12.2%	30.3%	0.9%	0.9%		
Revenue (\$M)	79,691	77,260	79,977	108,309	113,681	119,612	11.5%	
AGR	9.7%	-3.1%	3.5%	35.4%	5.0%	5.2%		
Average Price (\$)	752	816	962	1,000	1,041	1,085	7.4%	
AGR	1.3%	8.5%	17.9%	3.9%	4.1%	4.3%		
Installed Base (K)	446,675	449,007	446,228	459,692	464,591	463,322	0.8%	
AGR	-1.0%	0.5%	-0.6%	3.0%	1.1%	-0.3%		
Removal Age (Y)	4.89	5.34	5.69	5.50	5.40	5.31	-0.1%	
AGR	0.8%	9.2%	6.6%	-3.4%	-1.8%	-1.7%		
Average Installed Base Age (Y)	4.39	4.48	4.60	4.54	4.50	4.48	0.0%	
AGR	1.9%	1.9%	2.8%	-1.4%	-0.8%	-0.6%		
Replacement Cycle Length (Y)	5.04	5.86	6.20	5.85	5.45	5.15	-3.2%	
AGR	-3.5%	16.4%	5.7%	-5.6%	-6.7%	-5.5%		
Units per Households & Businesses (#)	3.17	3.16	3.11	3.18	3.18	3.14	-0.1%	
AGR	-2.2%	-0.5%	-1.5%	2.1%	0.2%	-1.1%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	
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## Total Personal Devices Consumer

United States Consumer Personal Devices								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	183,306	161,758	140,129	183,220	182,340	181,614	2.9%	
AGR	1.6%	-11.8%	-13.4%	30.8%	-0.5%	-0.4%		
Revenue (\$M)	140,609	134,592	136,016	190,864	204,100	218,648	12.9%	
AGR	-0.9%	-4.3%	1.1%	40.3%	6.9%	7.1%		
Average Price (\$)	767	832	971	1,042	1,119	1,204	9.7%	
AGR	-2.4%	8.5%	16.7%	7.3%	7.5%	7.6%		
Installed Base (K)	896,827	865,933	828,794	821,567	809,958	795,151	-2.1%	
AGR	-2.9%	-3.4%	-4.3%	-0.9%	-1.4%	-1.8%		
Removal Age (Y)	5.50	6.02	6.46	5.97	5.96	5.93	-0.4%	
AGR	2.1%	9.5%	7.2%	-7.5%	-0.3%	-0.4%		
Average Installed Base Age (Y)	5.84	5.94	6.03	5.94	5.83	5.72	-0.9%	
AGR	2.1%	1.6%	1.7%	-1.6%	-1.7%	-1.9%		
Replacement Cycle Length (Y)	5.26	5.49	5.68	5.31	5.18	5.05	-2.1%	
AGR	-2.7%	4.5%	3.3%	-6.4%	-2.6%	-2.5%		
Units per Households (#)	6.73	6.42	6.07	5.96	5.81	5.65	-3.1%	
AGR	-4.3%	-4.7%	-5.3%	-1.9%	-2.4%	-2.8%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	99.0%	99.3%	99.4%	99.5%	99.6%	99.7%	0.7%	
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## Enterprise

United States Enterprise Personal Devices								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	55,306	51,841	44,380	58,224	59,074	59,967	3.7%	
AGR	3.9%	-6.3%	-14.4%	31.2%	1.5%	1.5%		
Revenue (\$M)	42,405	42,891	42,655	58,992	63,107	67,612	12.1%	
AGR	8.8%	1.1%	-0.6%	38.3%	7.0%	7.1%		
Average Price (\$)	767	827	961	1,013	1,068	1,127	8.0%	
AGR	4.7%	7.9%	16.2%	5.4%	5.4%	5.5%		
Installed Base (K)	213,203	217,110	216,249	223,313	226,877	228,170	1.2%	
AGR	-0.8%	1.8%	-0.4%	3.3%	1.6%	0.6%		
Removal Age (Y)	5.03	5.29	5.57	5.22	5.03	4.89	-2.0%	
AGR	-1.1%	5.3%	5.2%	-6.3%	-3.5%	-2.9%		
Average Installed Base Age (Y)	4.83	4.80	4.86	4.74	4.68	4.65	-0.8%	
AGR	-0.8%	-0.7%	1.3%	-2.5%	-1.3%	-0.6%		
Replacement Cycle Length (Y)	4.73	5.53	5.78	5.37	5.09	4.89	-3.0%	
AGR	-1.8%	16.8%	4.5%	-7.2%	-5.2%	-3.9%		
Units per Businesses (#)	33.97	34.88	34.66	35.84	36.38	36.53	1.2%	
AGR	-1.0%	2.7%	-0.6%	3.4%	1.5%	0.4%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	99.0%	99.3%	99.4%	99.5%	99.6%	99.7%	0.7%	
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## Total Personal Devices

United States Consumer & Enterprise Personal Devices								
	2024	2025	2026	2027	2028	2029	CAGR '24-'28	Trend
Unit Shipments (K)	238,612	213,599	184,508	241,444	241,414	241,581	3.1%	
AGR	2.1%	-10.5%	-13.6%	30.9%	0.0%	0.1%		
Revenue (\$M)	183,015	177,483	178,671	249,856	267,207	286,260	12.7%	
AGR	1.2%	-3.0%	0.7%	39.8%	6.9%	7.1%		
Average Price (\$)	767	831	968	1,035	1,107	1,185	9.3%	
AGR	-0.9%	8.3%	16.5%	6.9%	7.0%	7.1%		
Installed Base (K)	1,110,029	1,083,043	1,045,043	1,044,881	1,036,835	1,023,321	-1.4%	
AGR	-2.5%	-2.4%	-3.5%	0.0%	-0.8%	-1.3%		
Removal Age (Y)	5.43	5.86	6.26	5.82	5.74	5.67	-0.9%	
AGR	1.4%	8.1%	6.8%	-7.1%	-1.2%	-1.4%		
Average Installed Base Age (Y)	5.65	5.71	5.80	5.69	5.59	5.50	-0.9%	
AGR	1.4%	1.1%	1.5%	-1.9%	-1.7%	-1.6%		
Replacement Cycle Length (Y)	5.15	5.50	5.70	5.32	5.16	5.01	-2.3%	
AGR	-2.6%	6.9%	3.5%	-6.5%	-3.2%	-2.8%		
Units per Households & Businesses (#)	7.96	7.67	7.32	7.25	7.12	6.97	-2.4%	
AGR	-3.9%	-3.6%	-4.5%	-1.0%	-1.7%	-2.2%		
	2024	2025	2026	2027	2028	2029	Change '20-'25	Trend
Market Penetration (%)	99.0%	99.3%	99.4%	99.5%	99.6%	99.7%	0.7%	
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# Market Model Variables

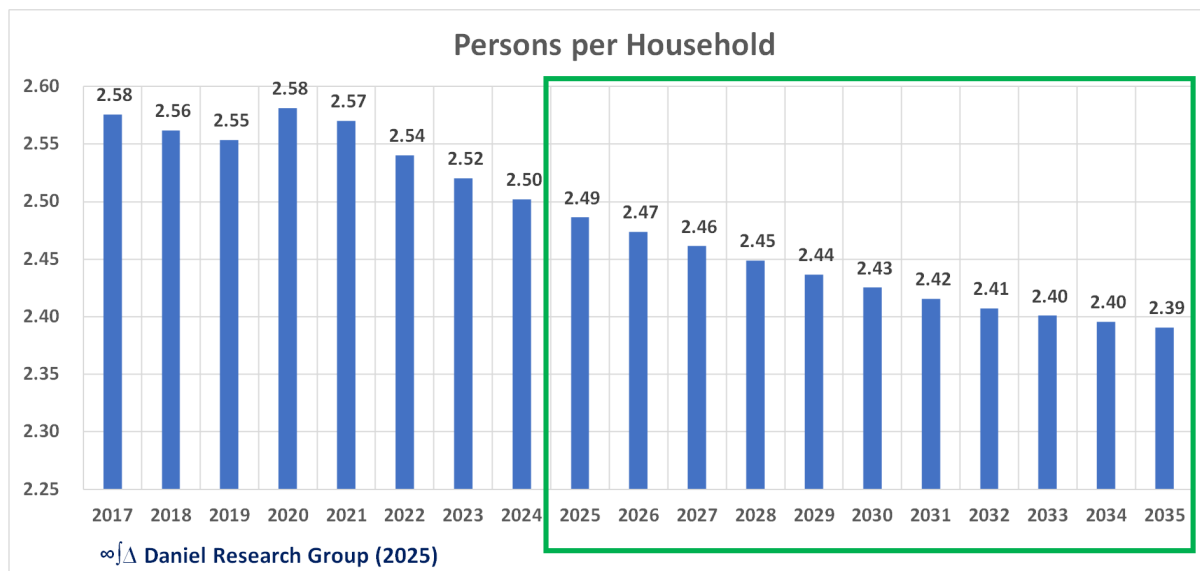
The market for almost any product or service can be defined in terms of six variables;

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.

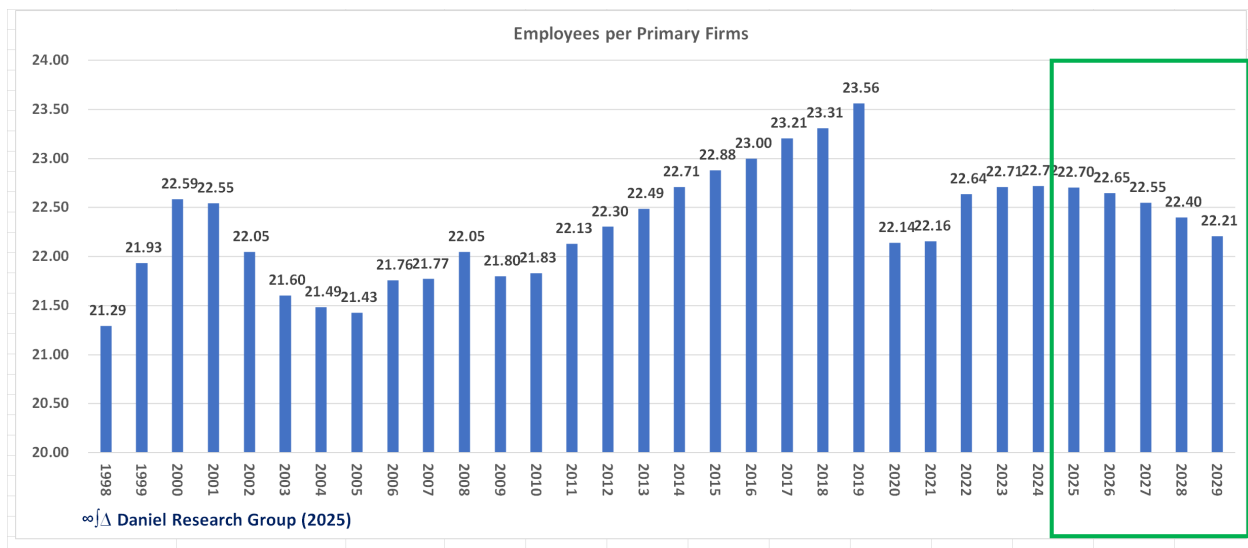
## Total Available Market (TAM)

**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 decline in household size is a major factor in the decrease in Personal Device demand in the consumer segment, outweighing Penetration increase and/or increasing Replacement Rates.**

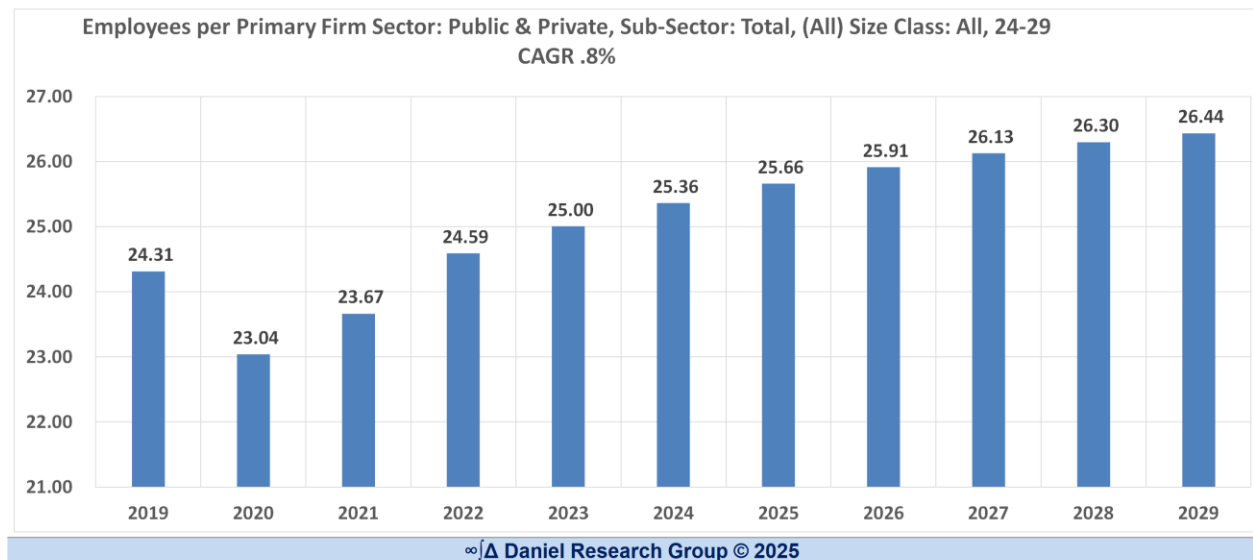
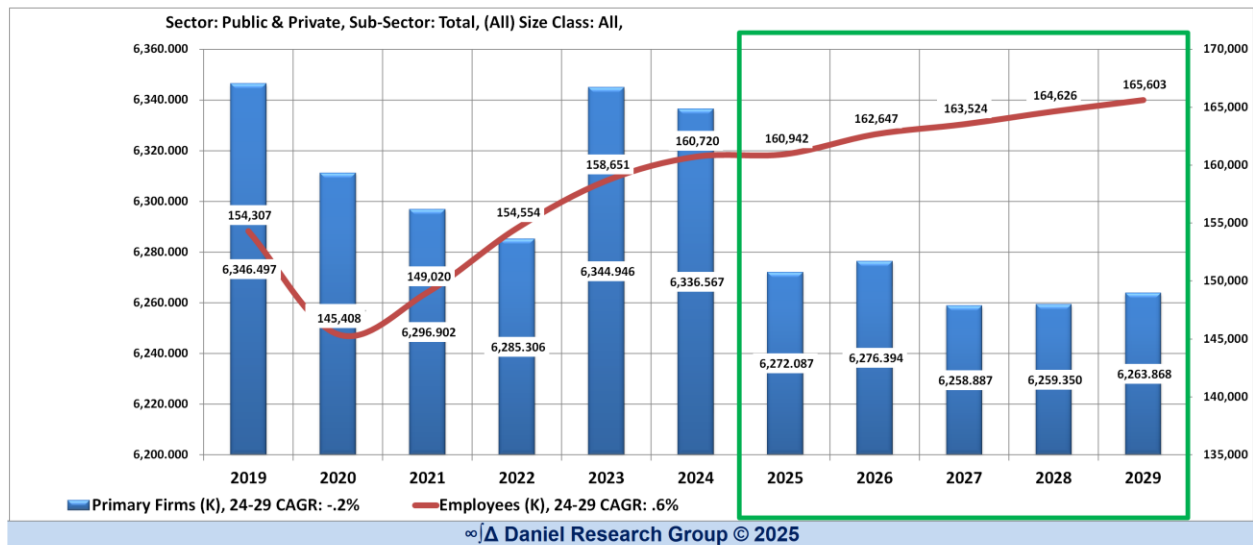
**Enterprise Businesses:** Historic data obtained from the US Census Bureau Statistics of the United States Businesses (SUSB) database.



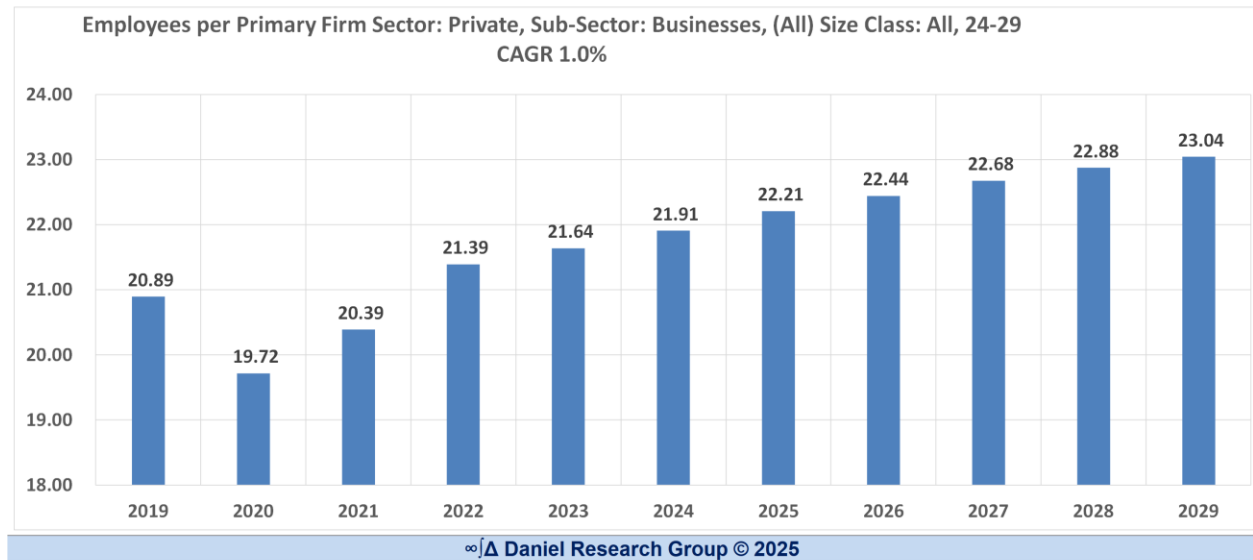
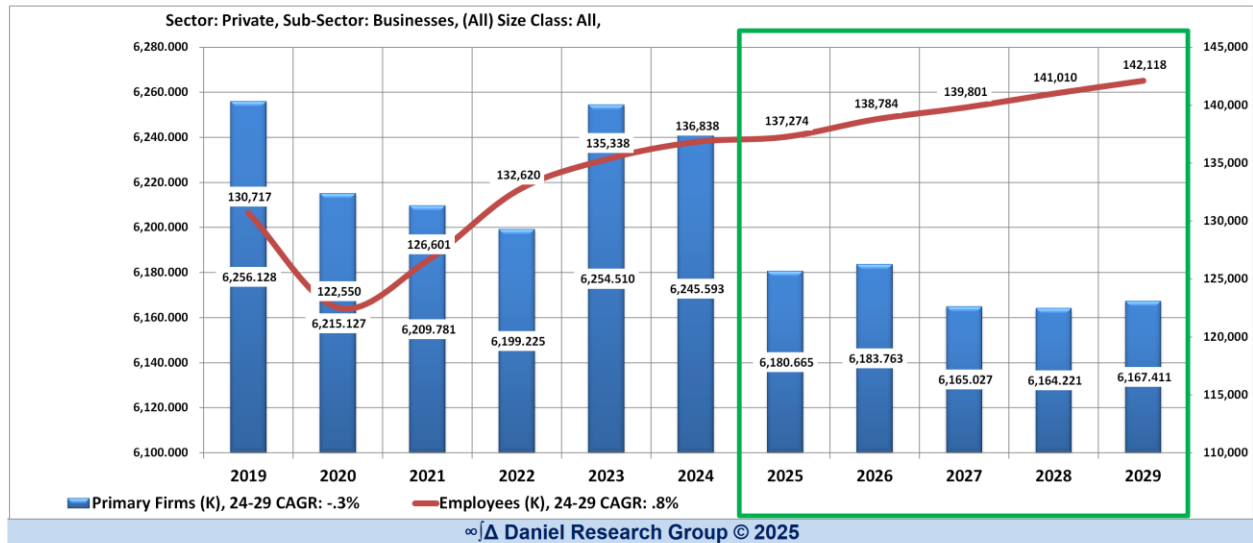
The long-term trend of increasing business size was disrupted by the pandemics. **DRGs Business Economic Demographic Database (BEDD)** forecast models predicted that the average size of business will start to increase again in 2025. The TAM used in the Enterprise Models is **Primary Firms** as computed 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.

An increase in business size will increase demand for Personal Computing Devices in the Enterprise Segment. **DRG** counts devices based on location more than ownership or purpose. As Work From Home declines this will move demand from the Consumer Segment to the Enterprise Segment.

## Total Public and Private Sectors



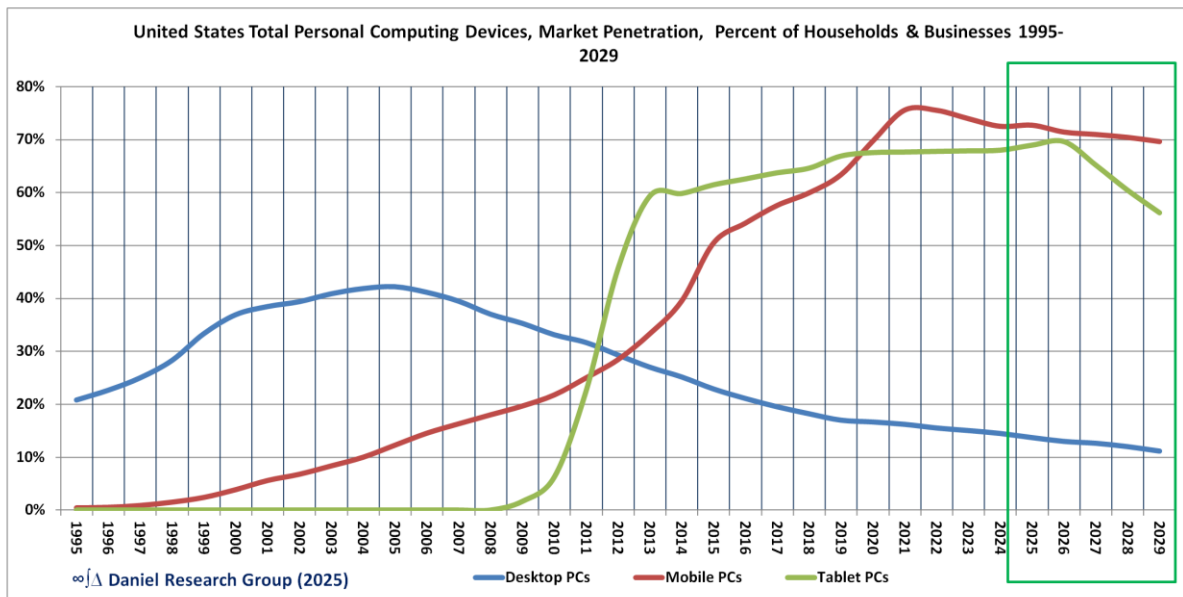
## Private Sector Only



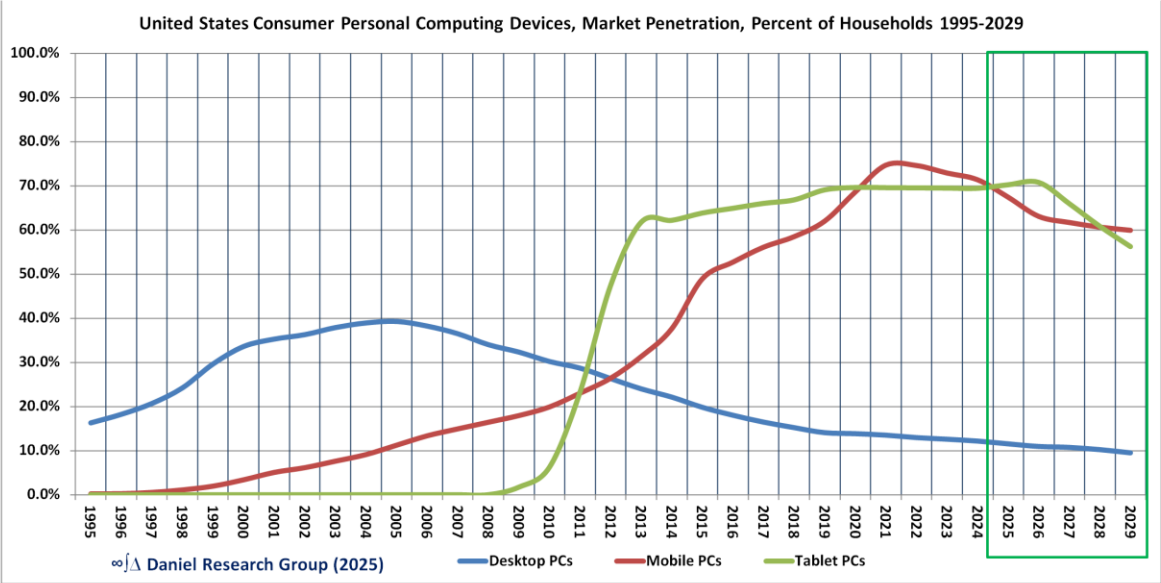
## Penetration

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.

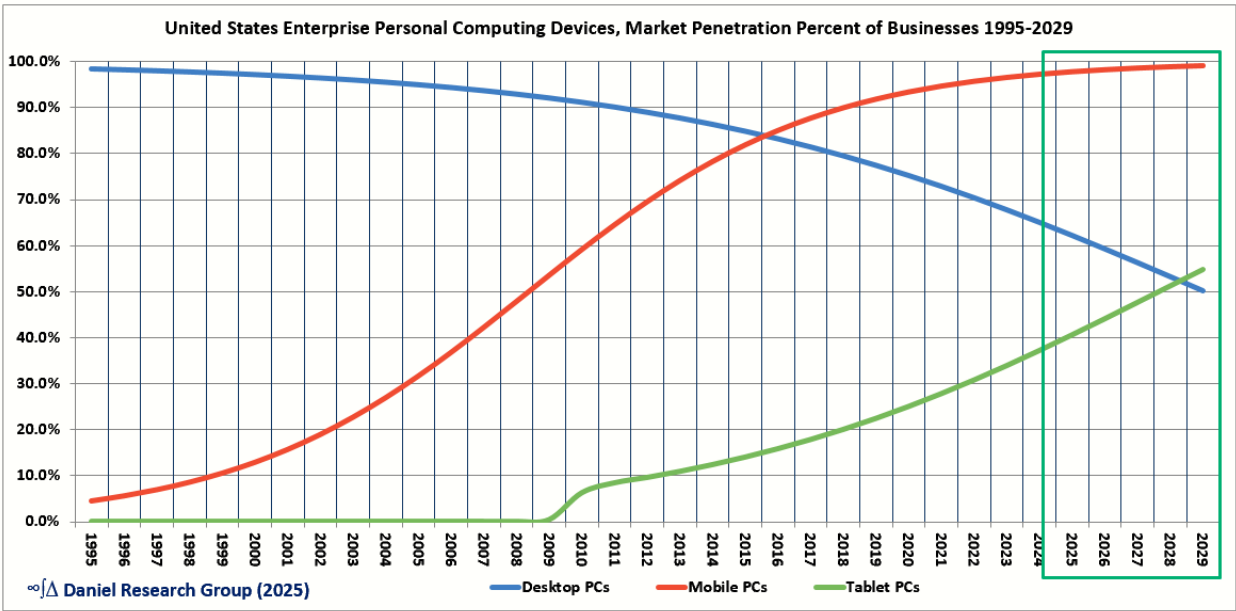
## Total PCs and Tablets



# Consumer PCs and Tablets

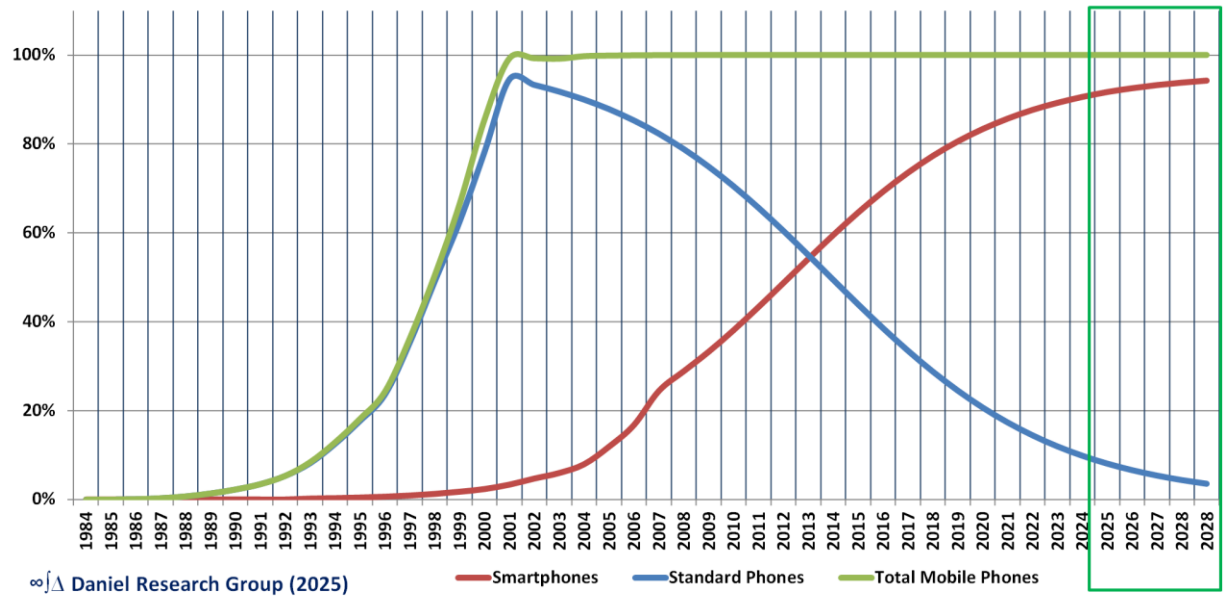


# Enterprise PCs and Tablets



## Mobile Phones

United States Personal Communications Device Market: Penetration, Percent of Households & Businesses 1984-2029



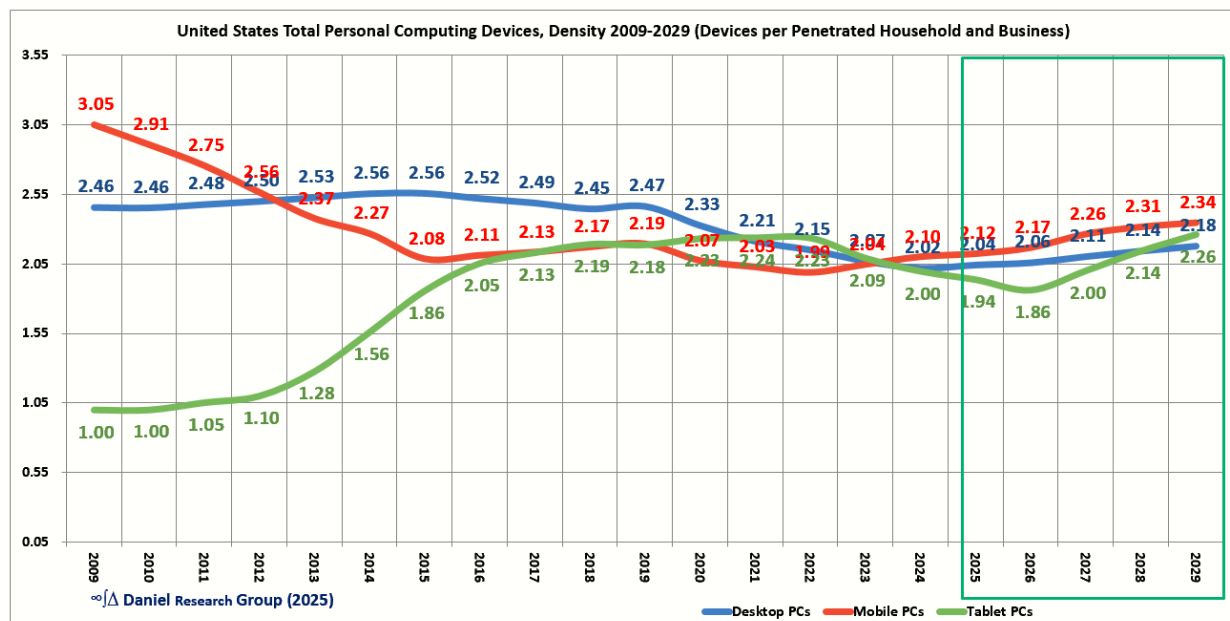


## Density

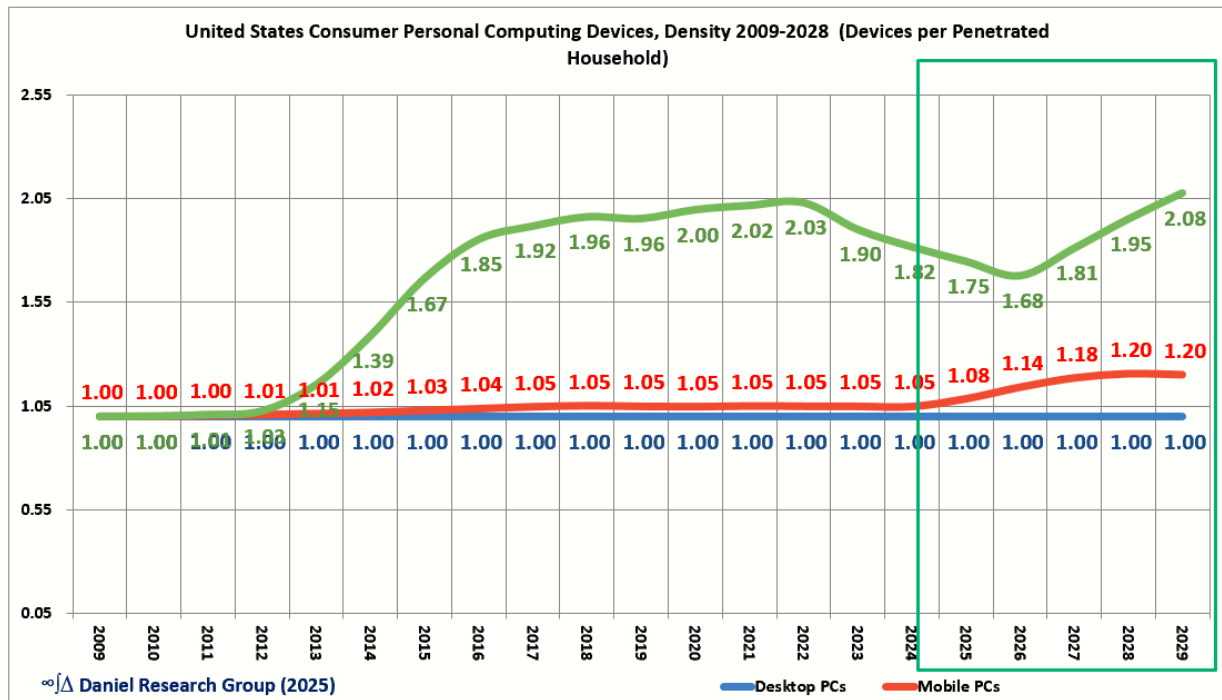
Density is the average number of Installed Base units in penetrated households and/or businesses. Densities are independent of penetration and reflect the distribution of single or multiple product users over the life of the product and the timing of the purchase of additional units. For most products, 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.

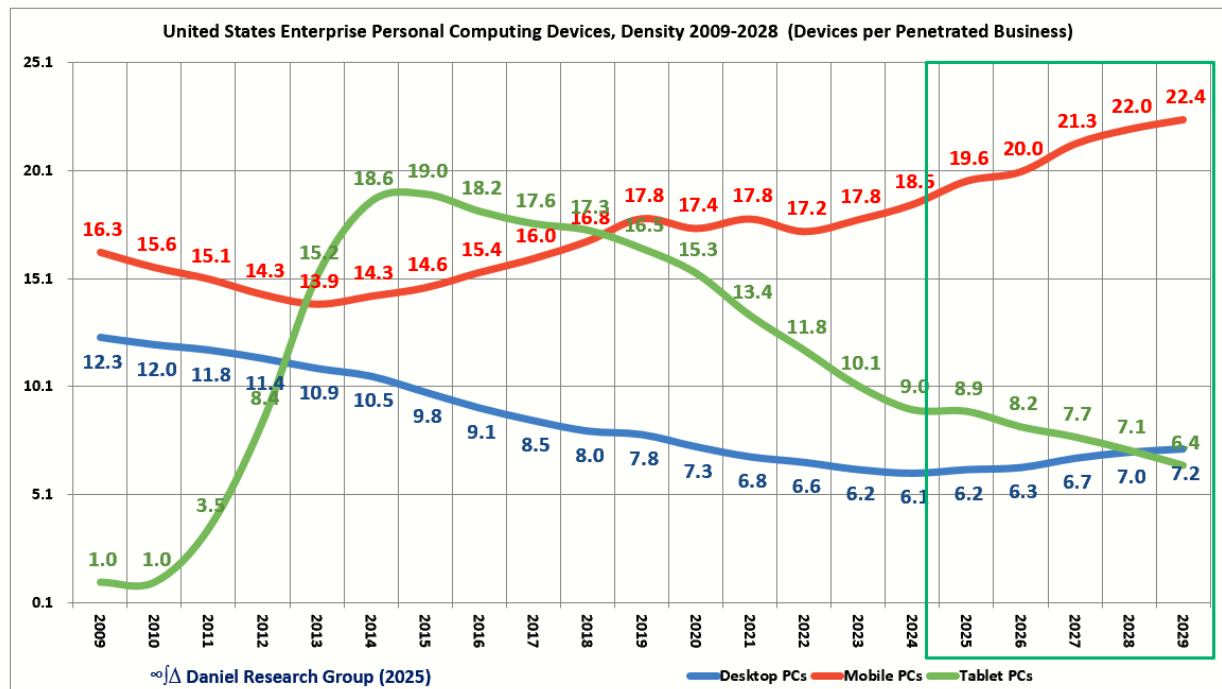
## Total



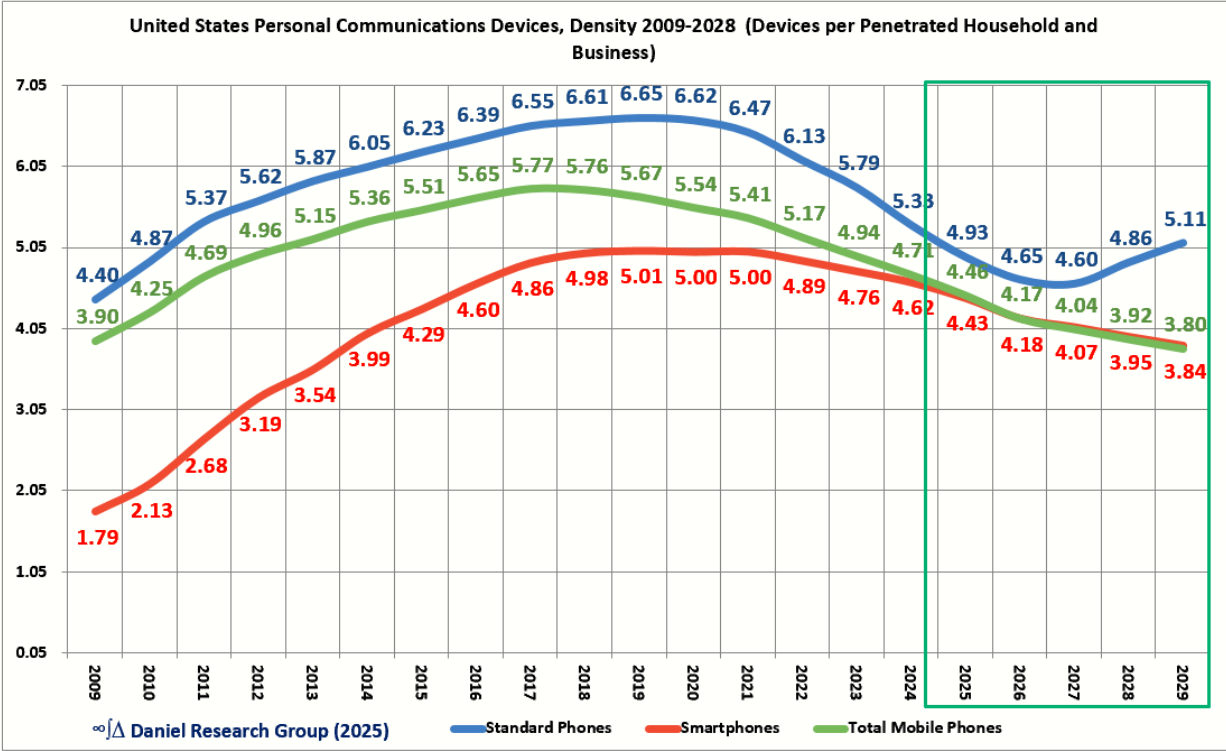
## Consumer



## Enterprise



# Mobile Phones



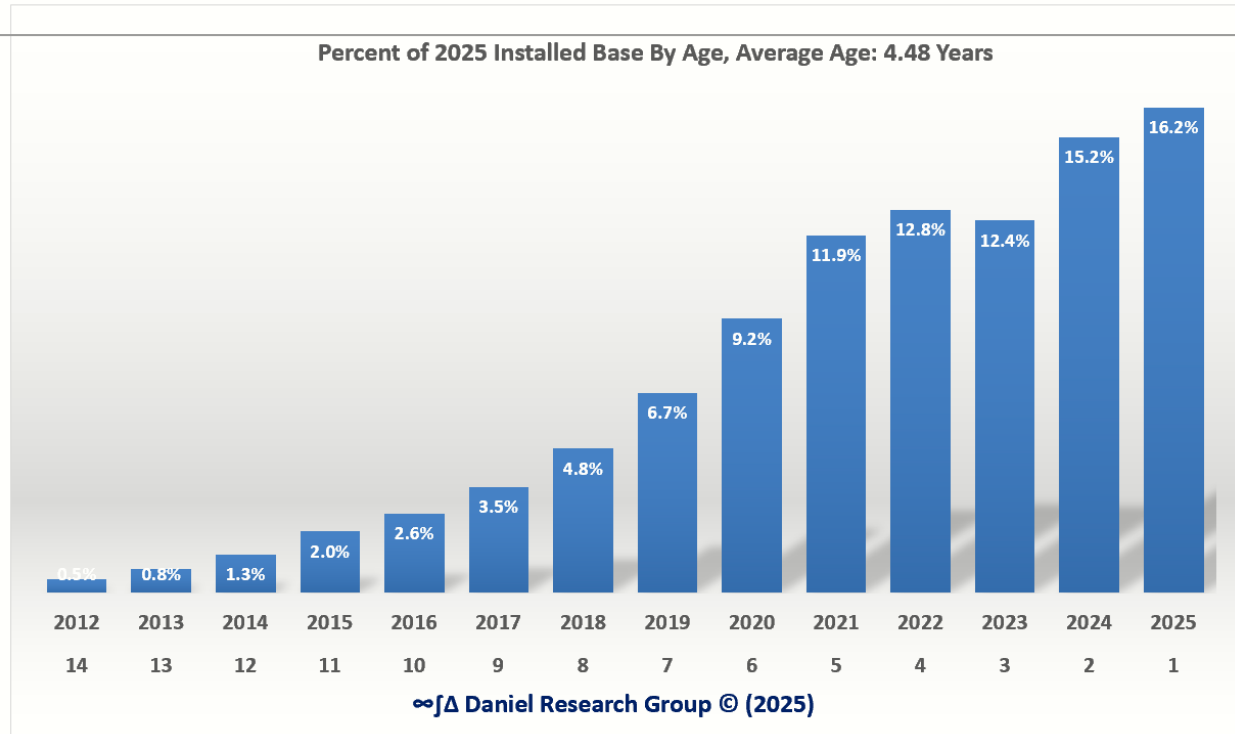
## Replacement Rates

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)

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

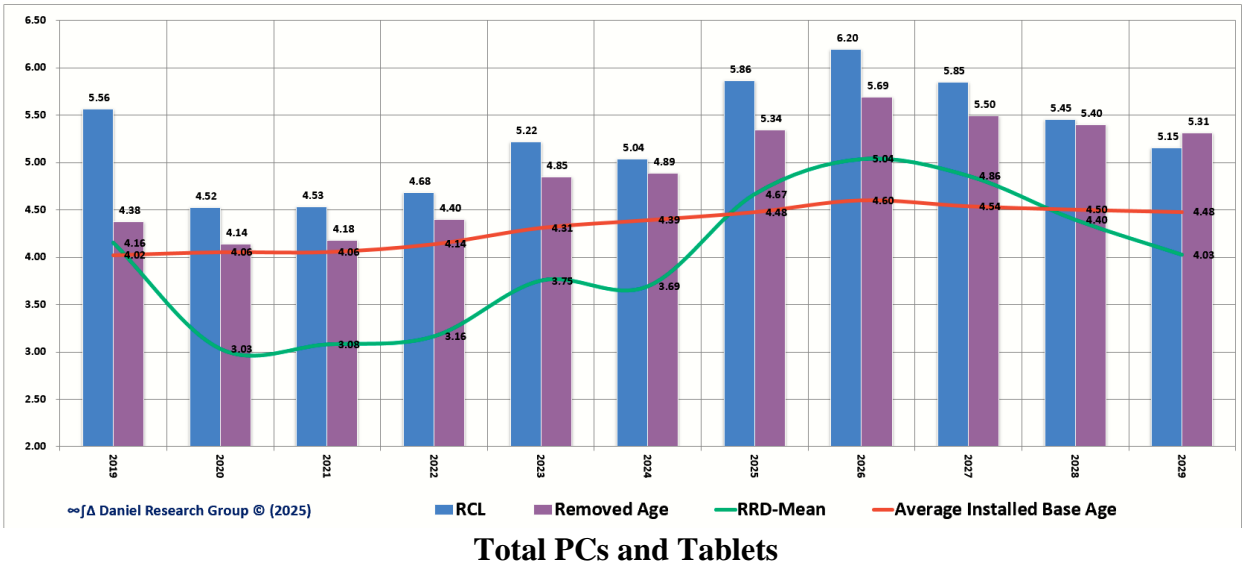
RCL is the length of time it will take for all the existing units in the Installed Base to be replaced given the current Installed Base size, Unit Shipments, and number of Units Removed from the Installed Base in that year. The **EQS** algorithm allows the RRD-μ to be adjusted to produce a target RCL 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.

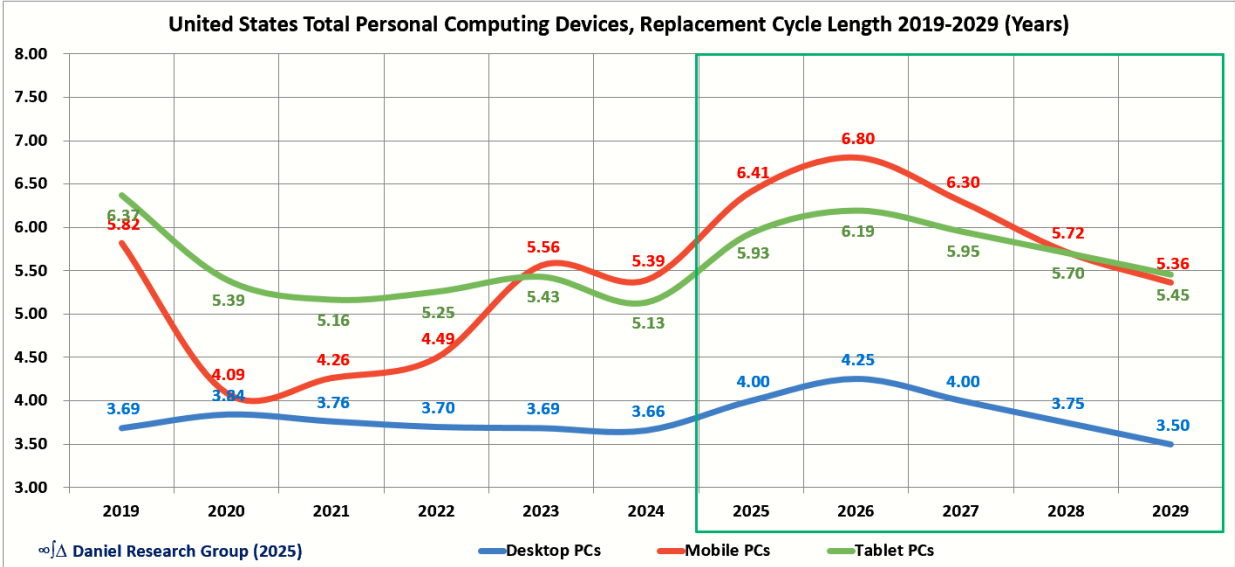
The value of each of these metrics is more in the trend than in the point values. A comparison of the four Installed Base age metrics for Total Computing Devices is presented in this chart. The RCL and RRD-Mean will exhibit the most variance due to anomalous events such as the operating system migration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



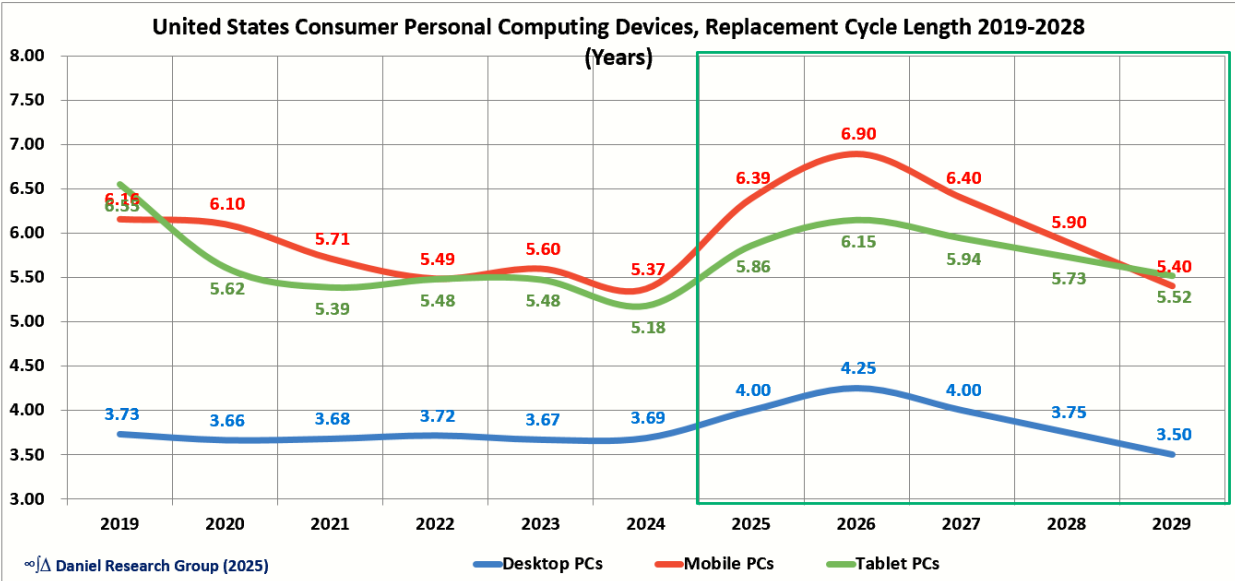
Each of the Age metrics answers a different question.

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

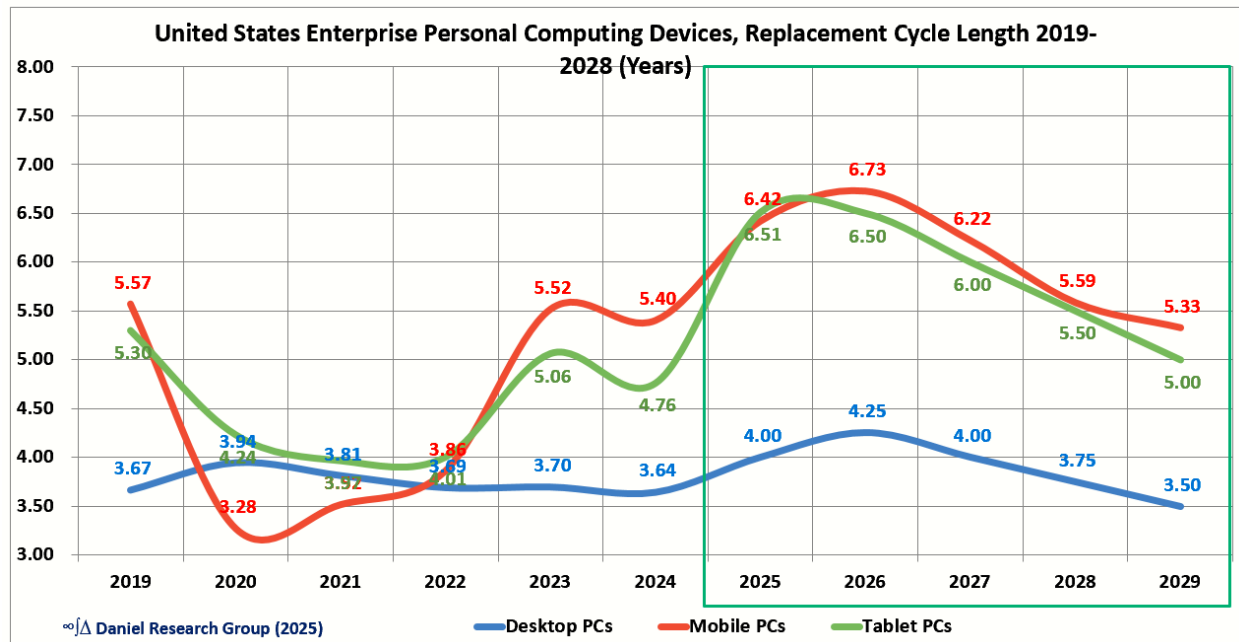
# Replacement Cycle Length Total



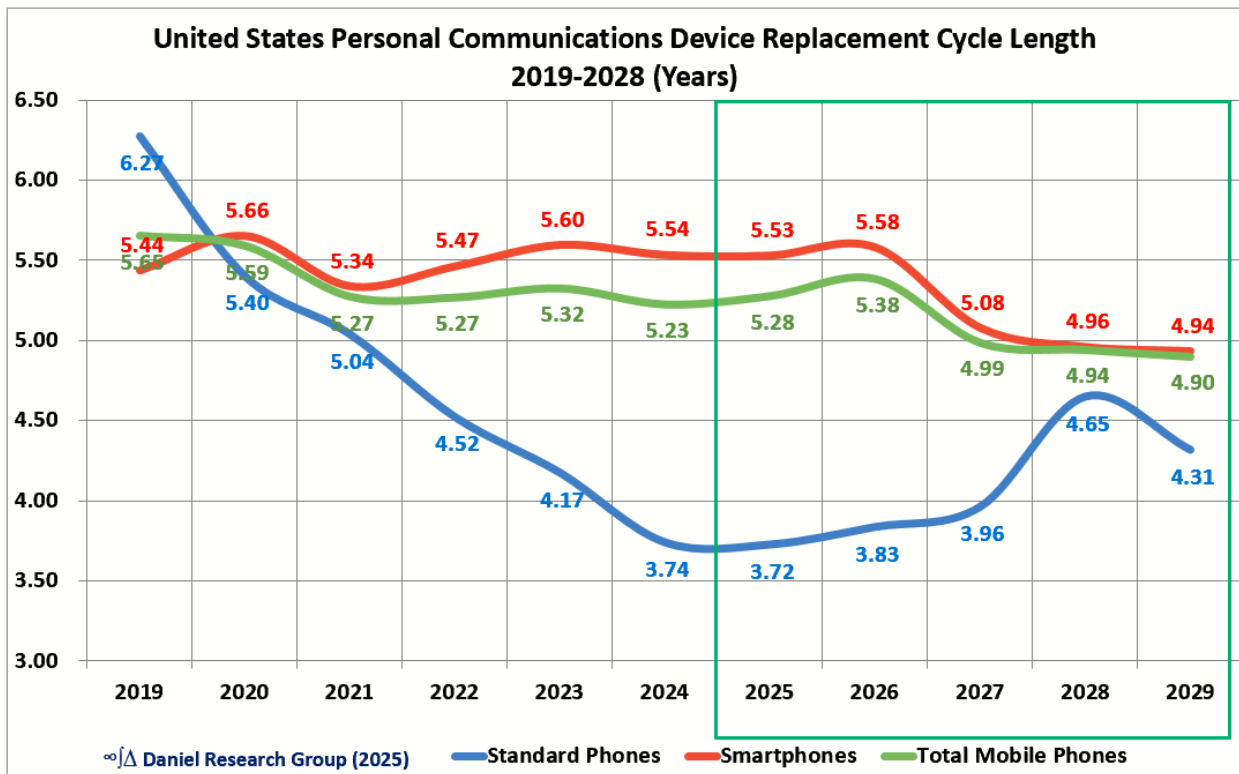
## Consumer



## Enterprise



## Mobile Phones

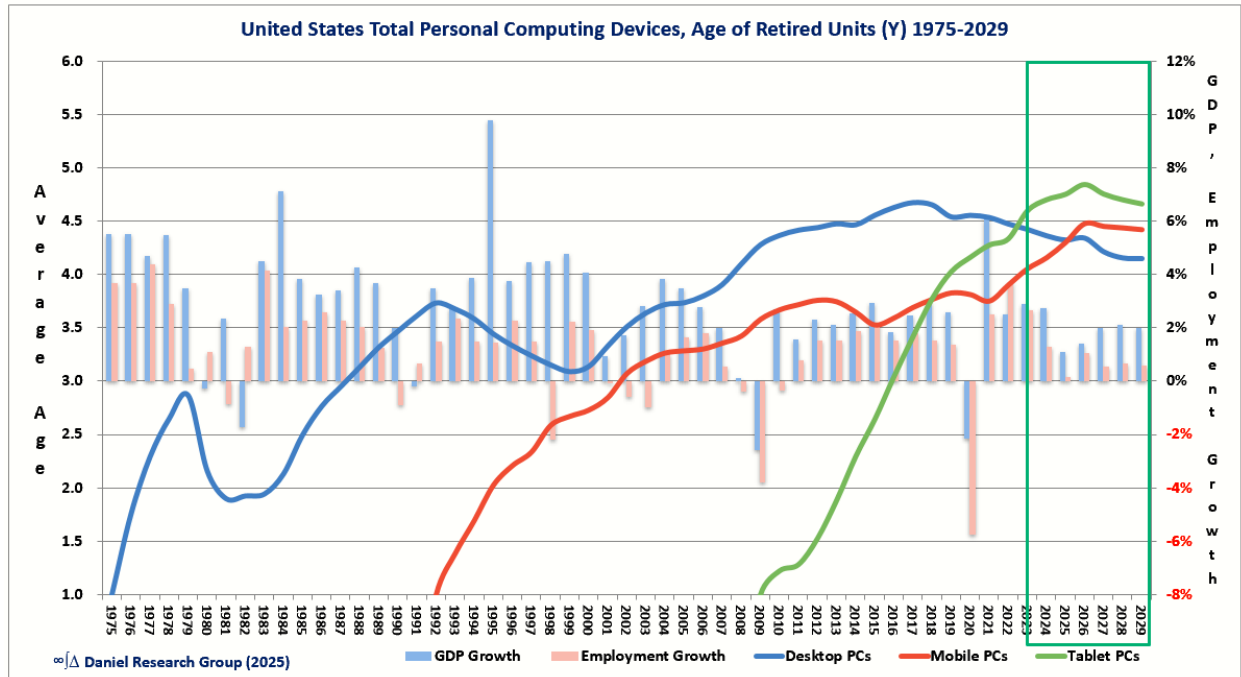


## Long-Term Charts

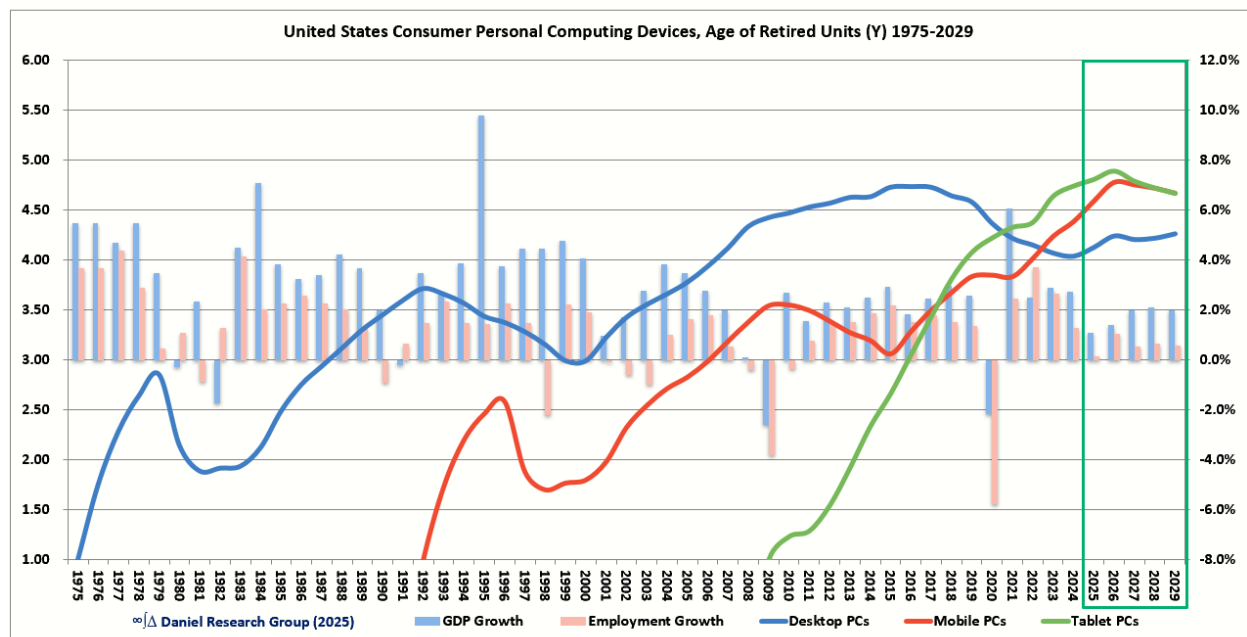
These charts provide additional historical context to better understand both the current state and the forecast in comparison to long-term trends.

### Average Removal Age

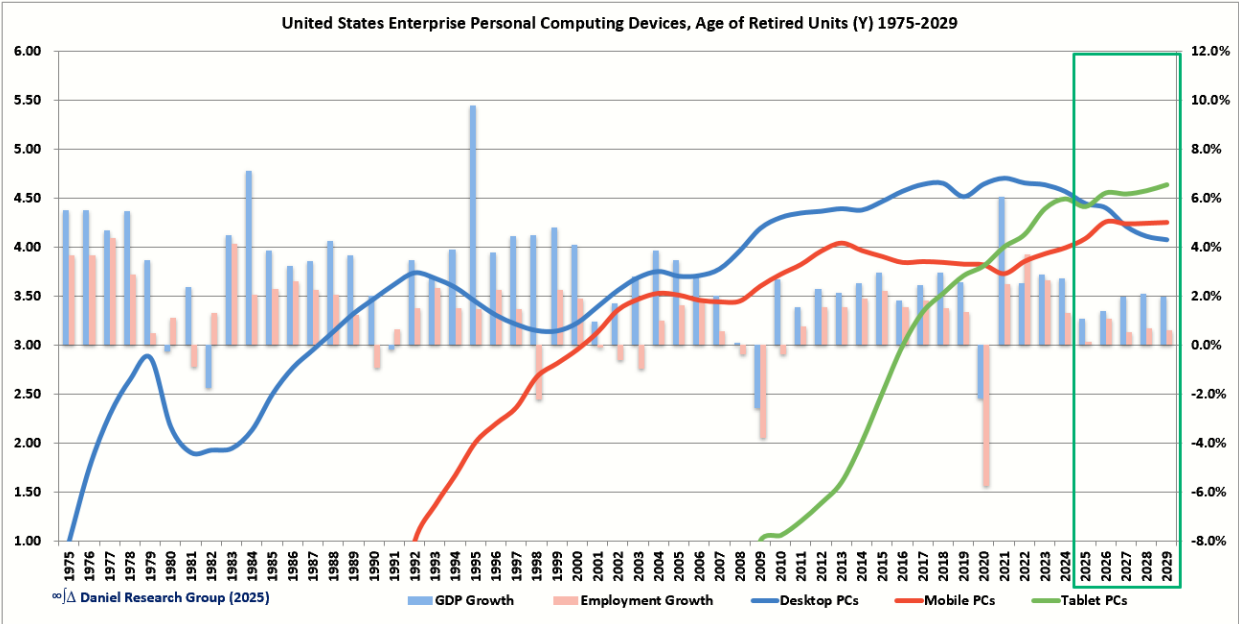
#### Total



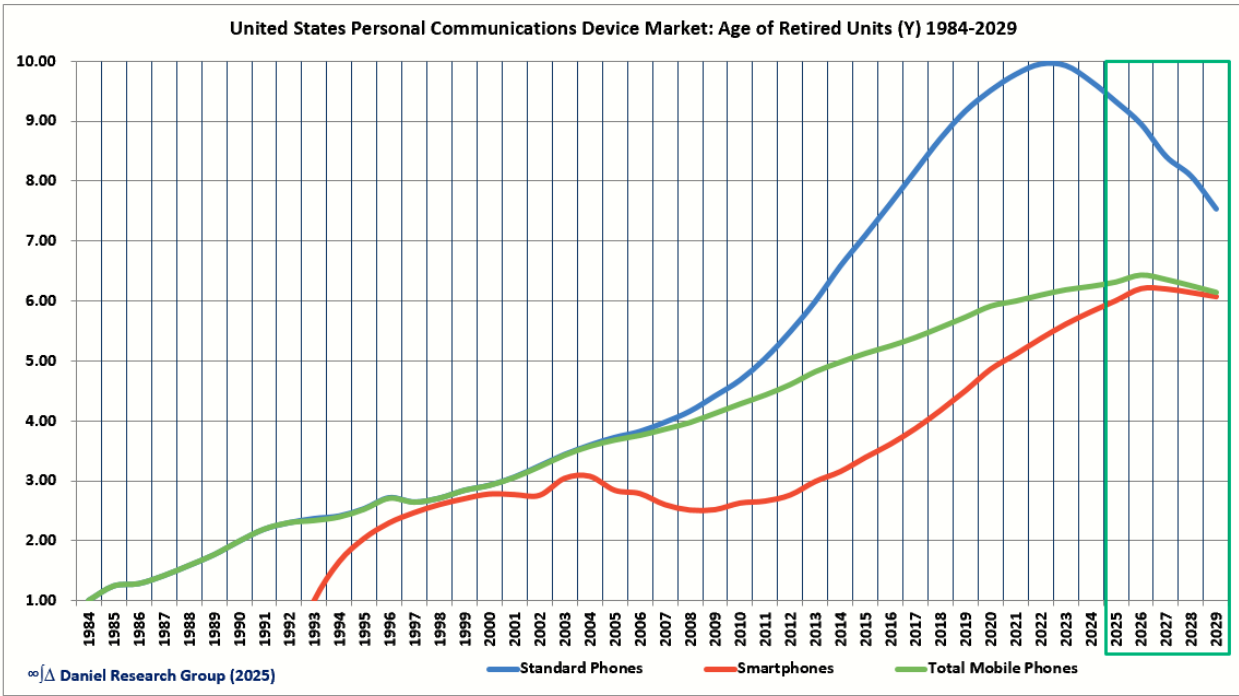
#### Consumer



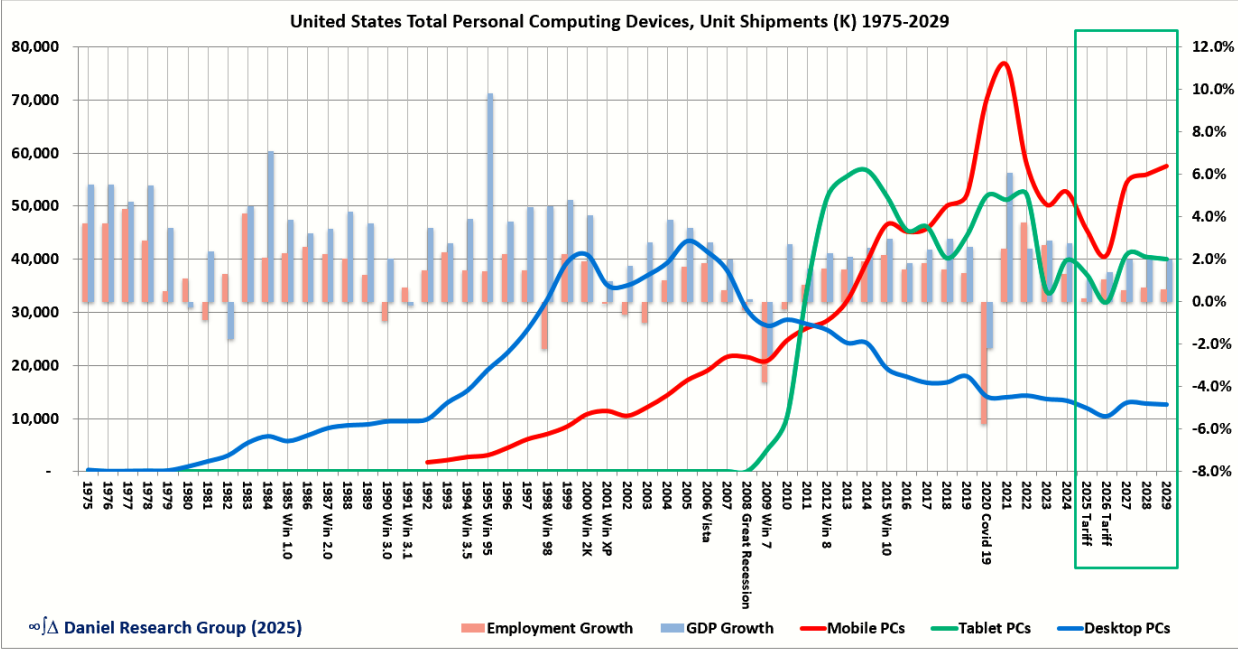
# Enterprise



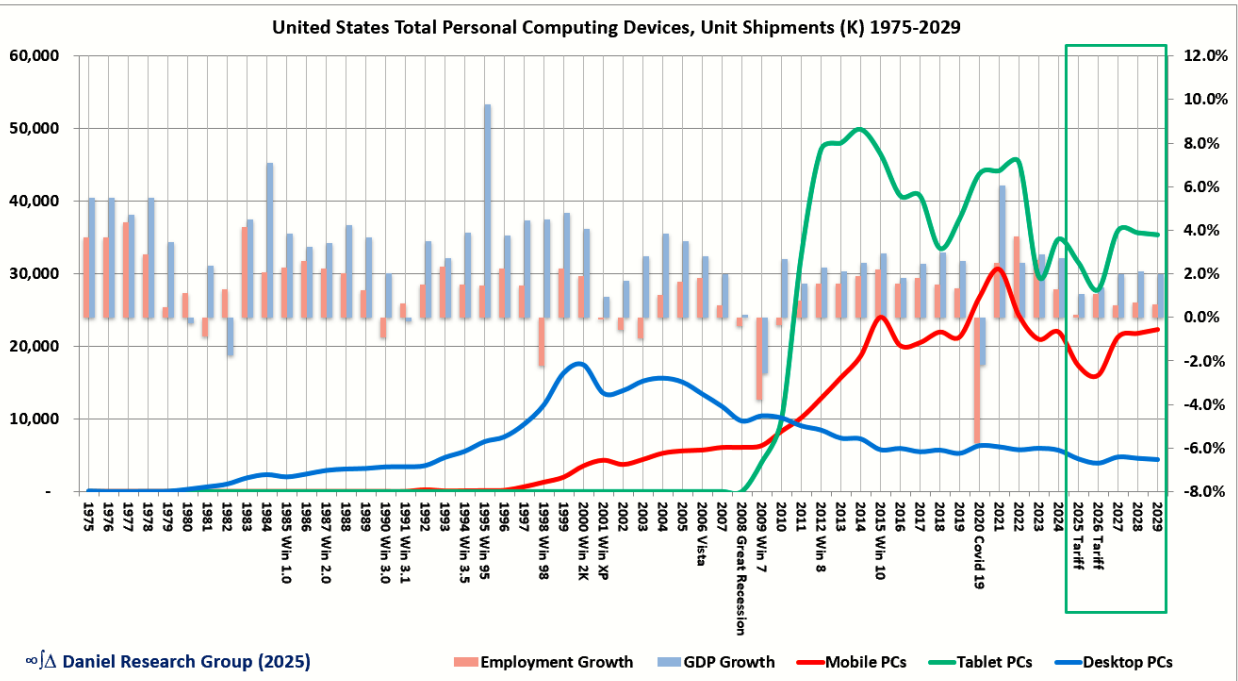
# Mobile Phones



# Unit Shipments Total

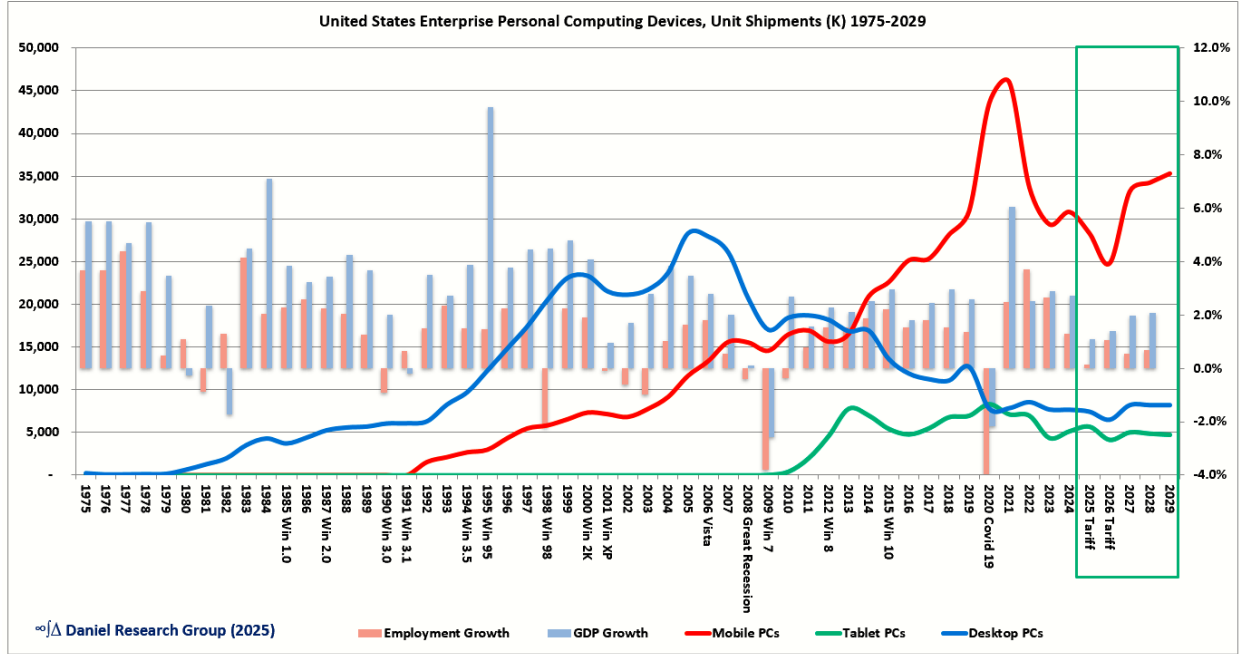


# Consumer

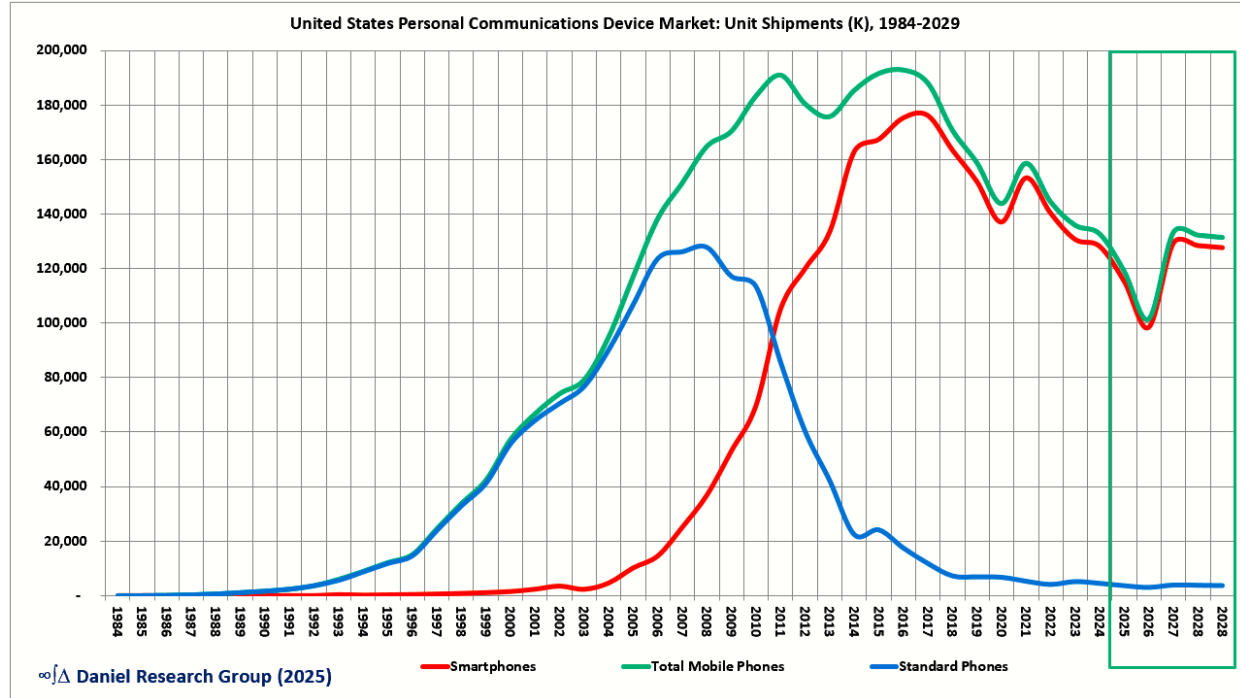




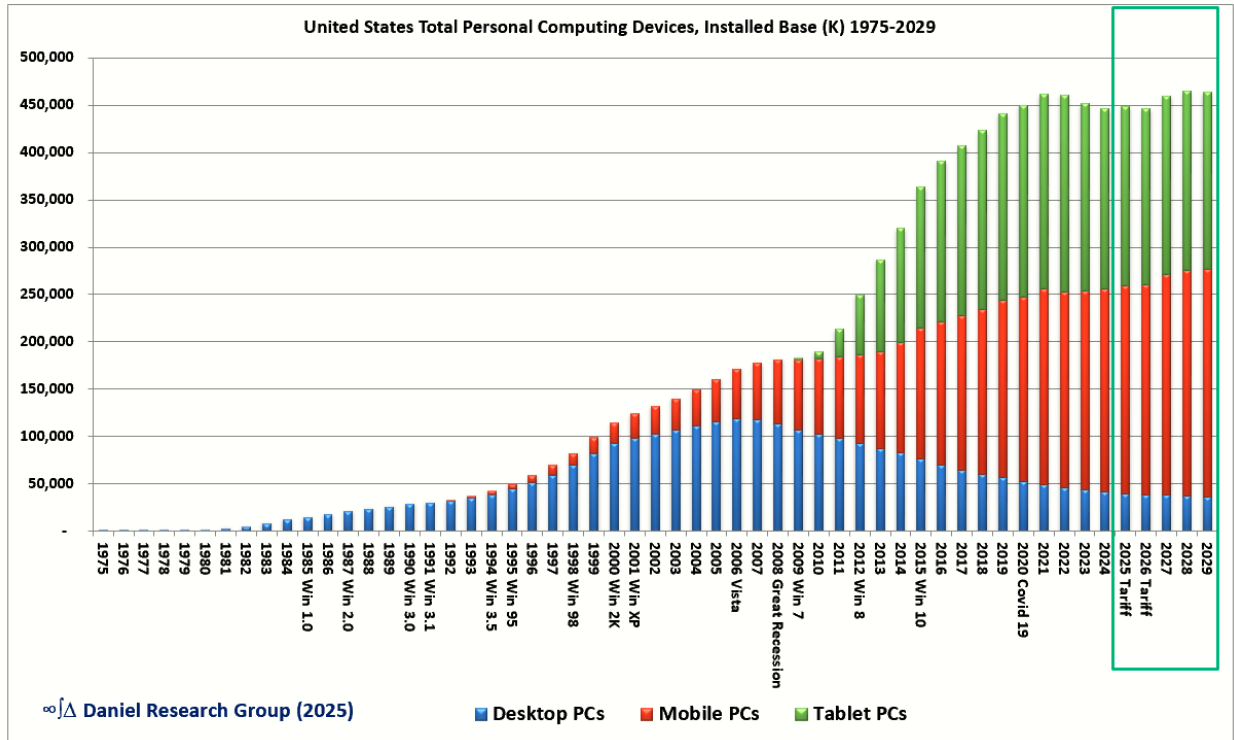
Enterprise



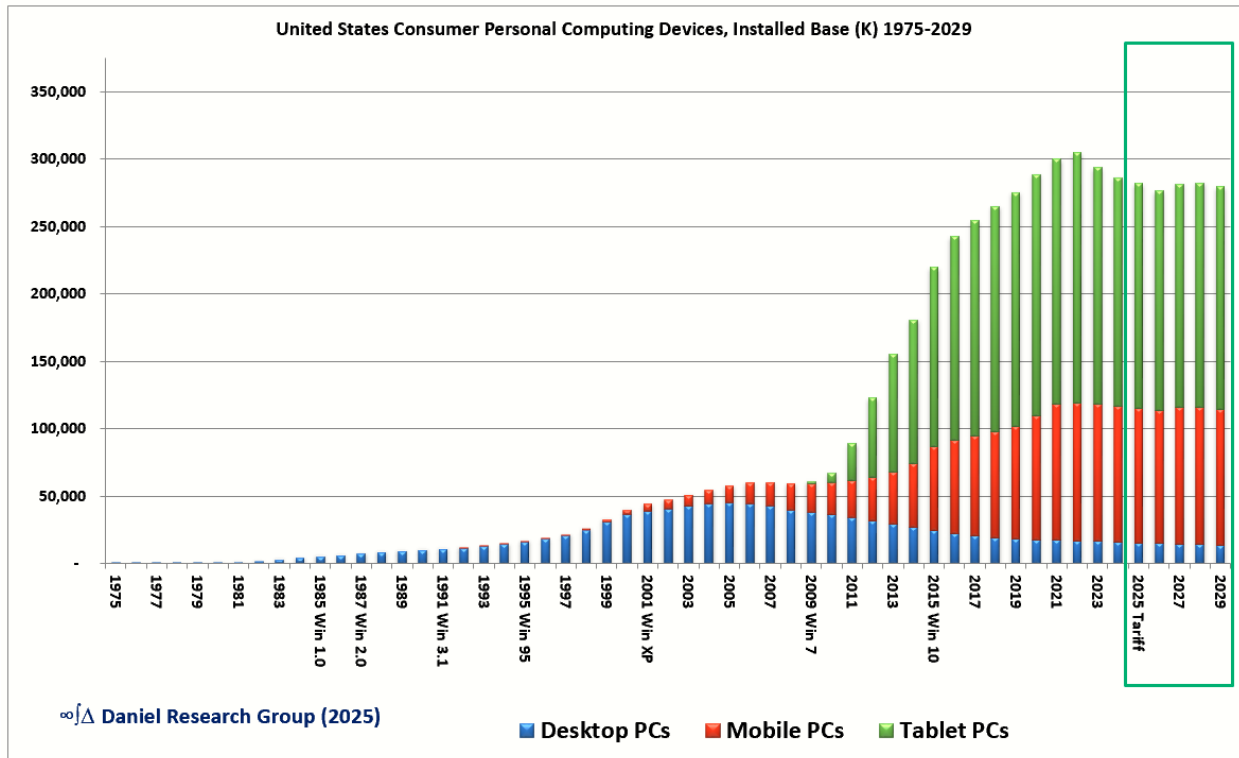
Mobile Phones



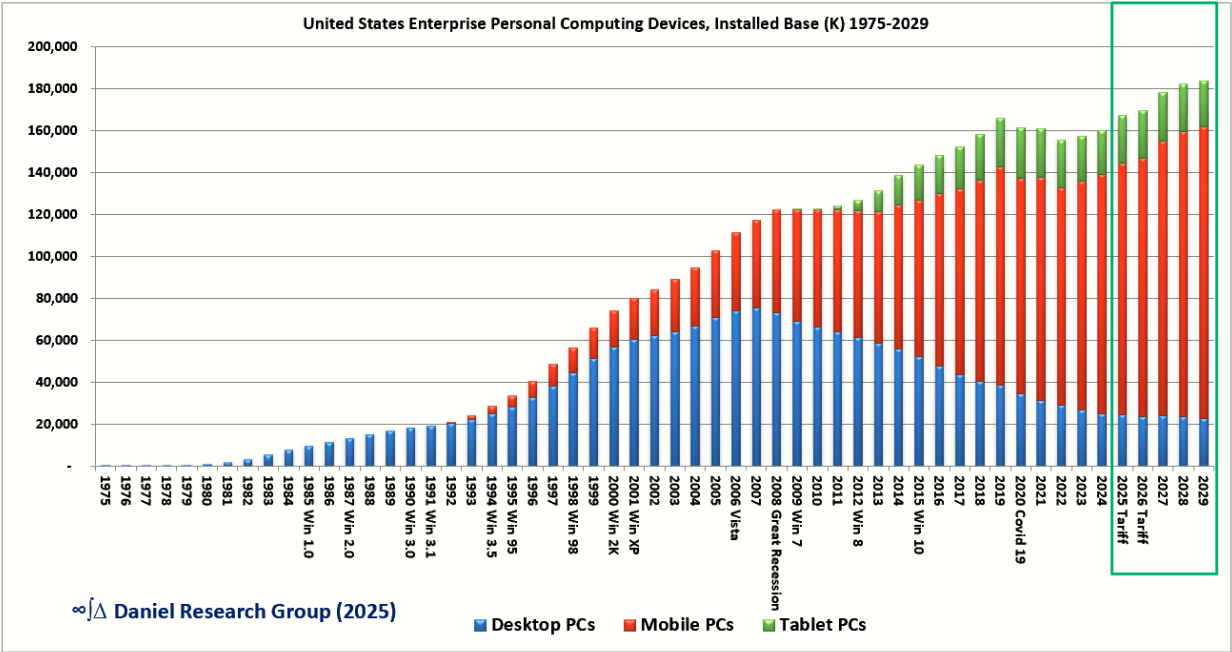
**Installed Base**  
**Total**



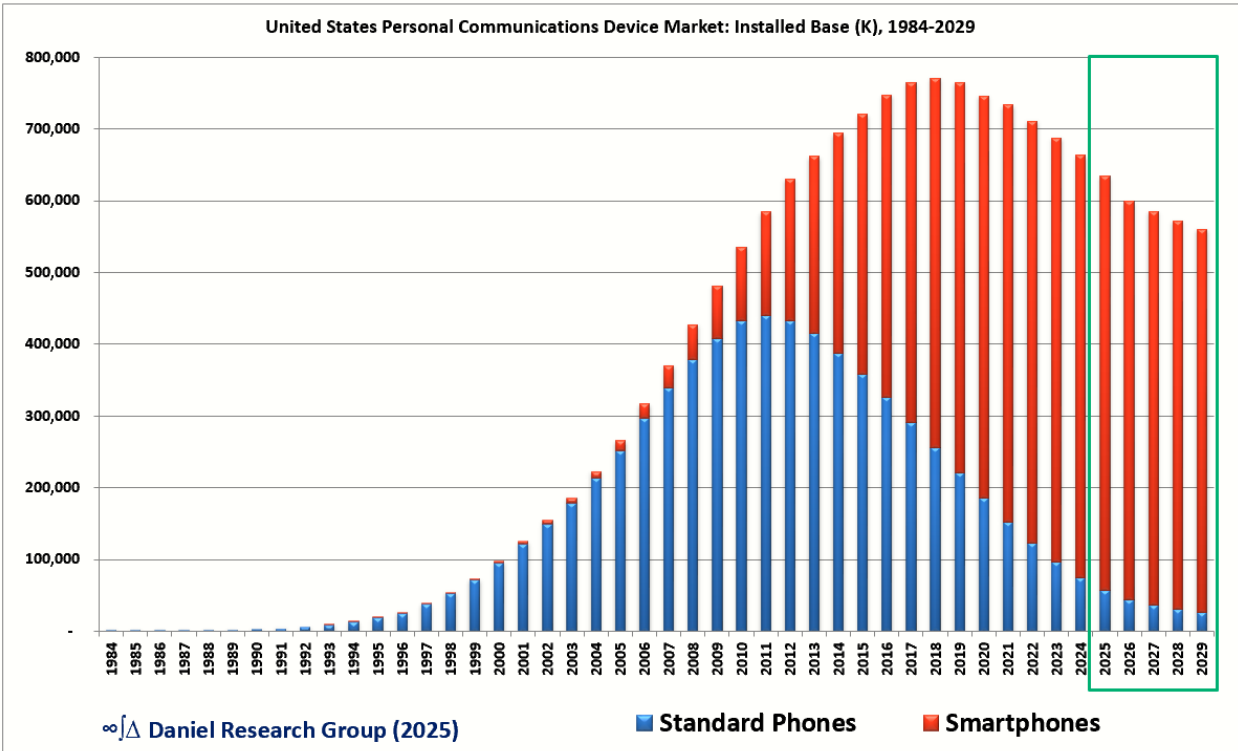
## Consumer



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.

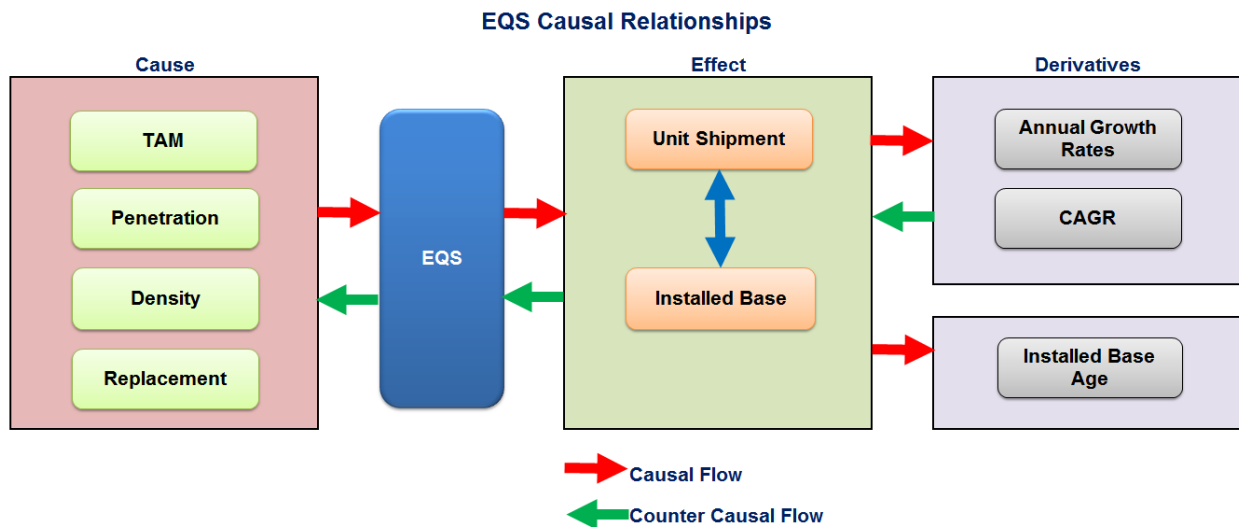
Our forecast approach proceeds in four modeling levels.

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.

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