



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

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

# Table of Contents

## [Our Approach](#)

## [The Forecasting Challenge](#)

### [Trump 2.0](#)

### [AI Opportunity](#)

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

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

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

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

# The Forecasting Challenges

There are currently two major factors that will significantly influence the demand for Personal Devices for the next five years, and longer.

1. **Trump** - The impact of the economic and some of the domestic policies and plans of the incoming Trump Administration
2. **AI** - The development and introduction of compelling AI applications that are resident on Personal Devices

## A Major Inflection Point – Trump 2.0

Donald J. Trump just won the Presidential Election. If Harris had won, we would not have expected the top line economic metric, GDP growth and the Unemployment Rate, to differ much from the current consensus forecasters, and specifically that of the Congressional Budget Office and the Bureau of Labor Statistics.

However, with Trump winning, the uncertainty significantly escalates. Most credible recognized economists are of the opinion that Trump's stated economic and other domestic policies will lead to a return of 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 and the courts can mitigate or block those plans.

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

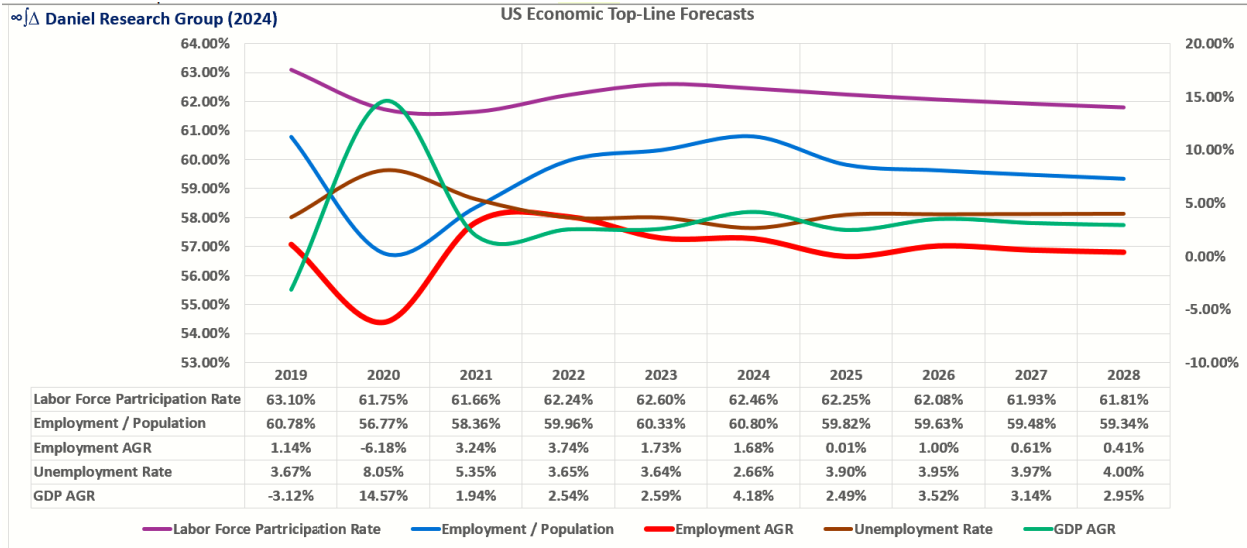
1. **Total Available Market**– Number of Households or Businesses in the US economy.
2. **Penetration Rate** – What Percent of those Households or Businesses own one or more of the devices.
3. **Density** – For Households or Businesses that own one or more of the devices, how many.
4. **Replacement Rate**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

Each of those variables could be significantly negatively impacted by the Trump economic and domestic policies and plans. Given no clarity at this time as to how much of Trump's stated economic objectives will be actually implemented, and what the effect will be, the forecasts presented in this report are those that are based on prior economic and demographic assumptions.

**DRG** will be reviewing the many new economic and market forecasts and analysis reports that will be produced and published over the next few weeks, and will be updating our next forecasts

(December 2024) to more accurately reflect the anticipated impact of the Trump economic and social agendas on the US Economic Demographic Structure and the Personal Device Markets.

## 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](#)

## The AI Opportunity

The eventual realization of the AI potential for AI devices is dependent on the development of applications for existing and new use cases that can be implemented on the AI devices, as well as the required support services. The revenue potential for these applications and services is significantly larger than the that for the devices themselves.

The Total Available Market for these applications and services is the number of owner/users that already have AI devices (the Penetrated Total Available Market) and the number of these devices in use (the Installed Base). Developers and marketers of those applications and services will need to have an accurate estimate of size of the Total Available Market and its growth.

The availability of cloud-based AI use cases and applications is expanding, as is the availability of personal devices capable of supporting resident AI applications and agents. Still, the question remains, **why would users choose a resident AI application rather than a cloud based one.** DRG has identified three primary reasons

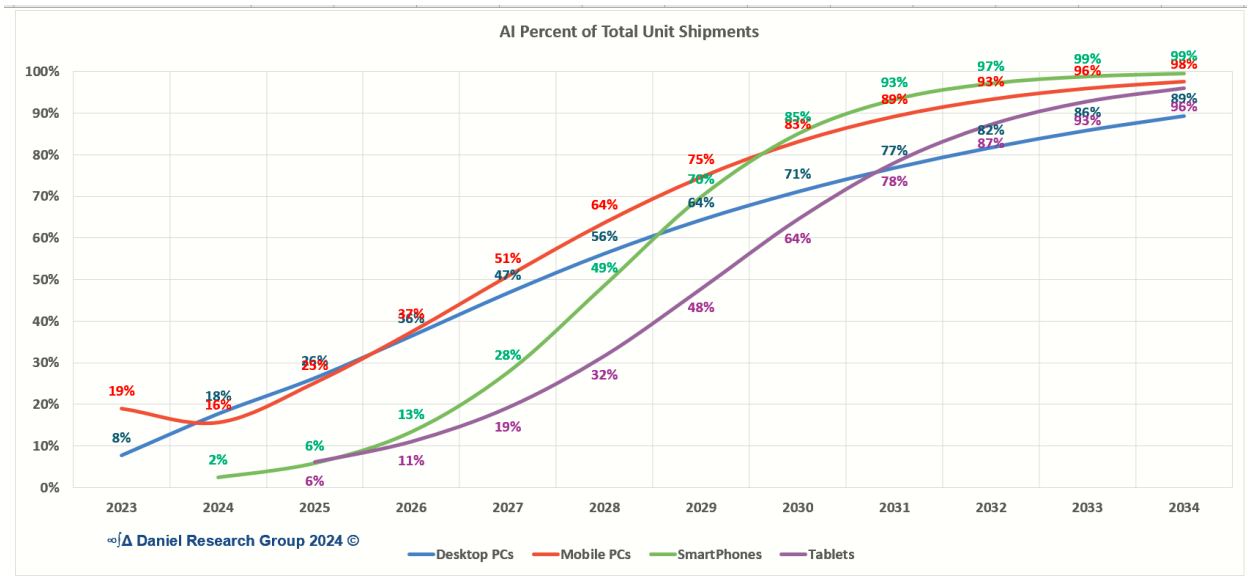
1. **Requires Resident Data** – For availability, privacy, or security concerns, all or some of the required data only resides on the user’s device and can or should not be accessible to the cloud. DRG had development a preliminary use case taxonomy for these AI Device Resident applications/agents
  - a. Task Automation
    - i. Consumer Life Management,
    - ii. Environment/Infrastructure Management
    - iii. Enterprise Business Process Management
    - iv. Device Management
  - b. Query – Research and Recommendation dependent on private data
  - c. Content Creation and Entertainment
  - d. Research and Development - downloading and downsizing of existing cloud applications that can work on smaller datasets
2. **Vendor Preferred Business Model** – Application and Agent developers/marketers prefer to sell resident installable products rather than cloud-based services that would require more after-market support.
3. **Users Have No Choice** – eventually all available devices will be able to support AI devices.

The DRG EQS models will produce the most accurate forecast of the size and growth of the AI Device market by product, segment, and form factors. Our current AI Device forecast report is also available [free from our web site](#)

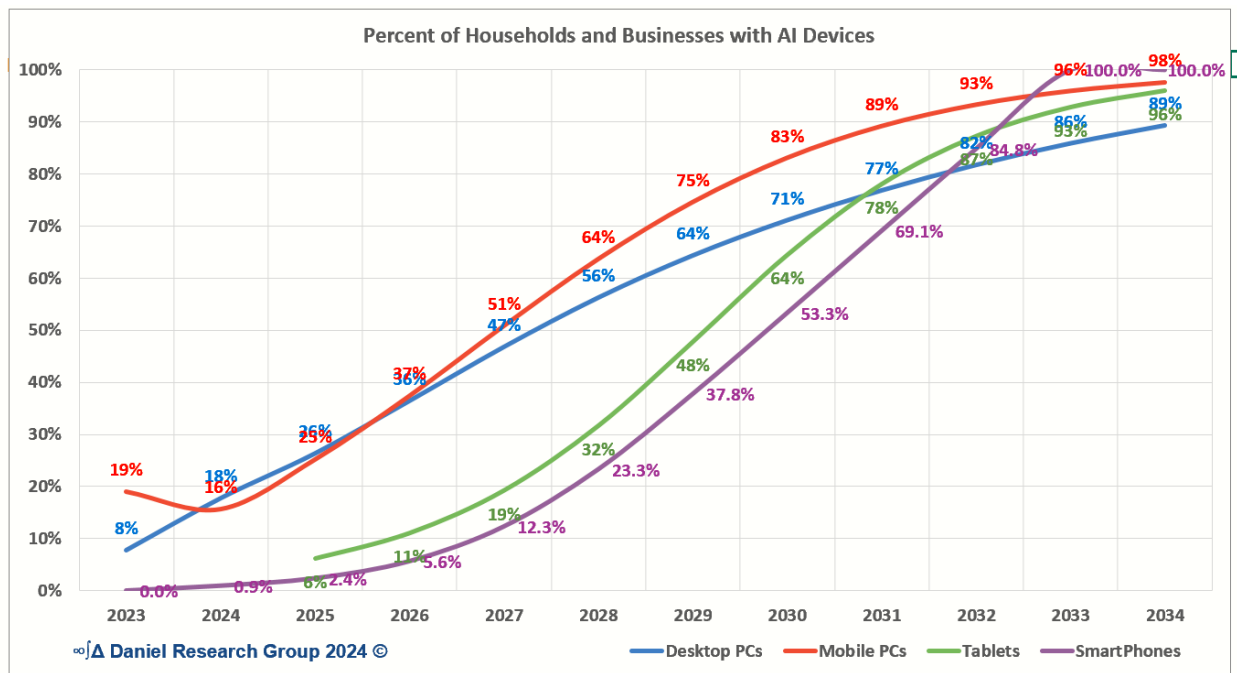
# The United States AI Enabled Personal Computing Devices Market Size and Ten-Year Forecast

## November 2024

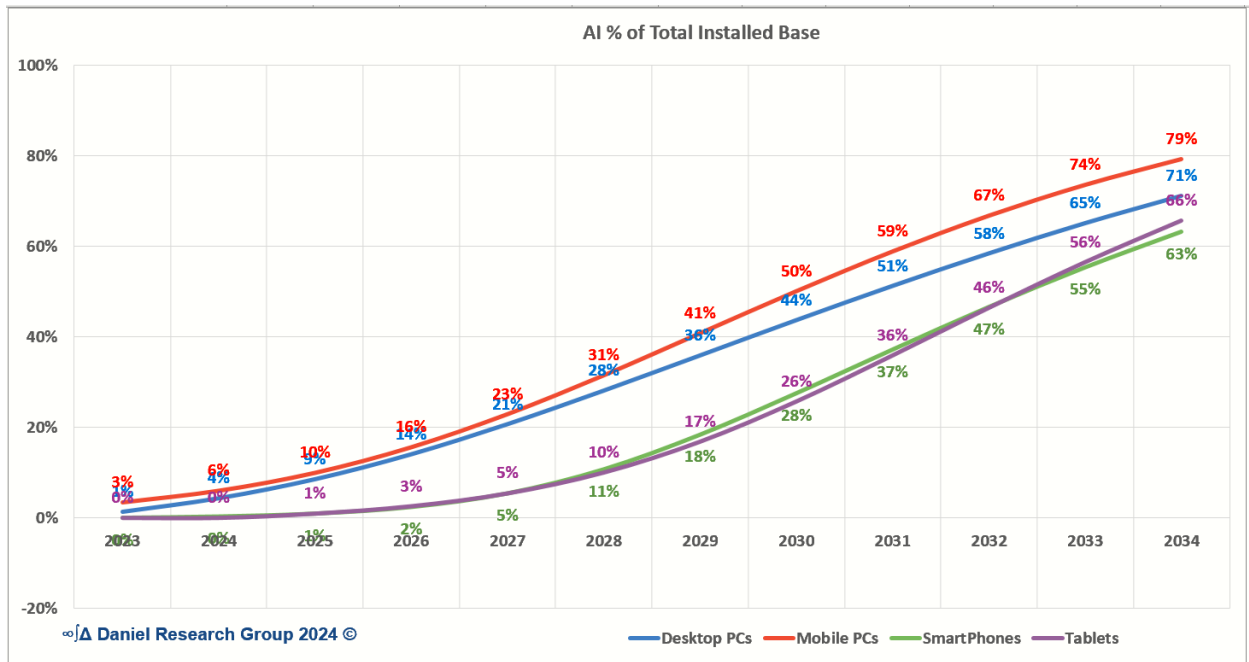
### AI Percent of Unit Shipments



### AI Market Penetration of Households and Businesses that own the Device



### AI Percent of Installed Base





# 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	13,495	12,642	11,896	11,173	10,488	-5.2%	
AGR	AGR	-14.8%	-1.3%	-6.3%	-5.9%	-6.1%	-6.1%		
<b>Mobile PCs</b>									
Traditional Mobile PCs		42,899	45,382.7	45,675.8	46,159.0	46,542.7	46,882.5	1.8%	
AGR		-12.5%	5.8%	0.6%	1.1%	0.8%	0.7%		
Convertible Mobile PCs		7,399	7,687	8,120	8,555	8,977	9,397	4.9%	
AGR		-16.5%	3.9%	5.6%	5.4%	4.9%	4.7%		
	<b>Total Mobile PCs</b>	50,298	53,069	53,796	54,714	55,520	56,279	2.3%	
	AGR	-13.1%	5.5%	1.4%	1.7%	1.5%	1.4%		
<b>Total PCs</b>									
	<b>Total PCs</b>	63,972	66,565	66,438	66,610	66,693	66,768	0.9%	
	AGR	-13.5%	4.1%	-0.2%	0.3%	0.1%	0.1%		
<b>Tablets</b>									
Detachable		19,233	22,488	22,670	22,895	22,978	22,957	3.6%	
AGR		-21.3%	16.9%	0.8%	1.0%	0.4%	-0.1%		
Slate		14,694	19,269	17,776	16,830	15,898	15,004	0.4%	
AGR		-47.1%	31.1%	-7.7%	-5.3%	-5.5%	-5.6%		
	<b>Total Tablets</b>	33,927	41,757	40,446	39,725	38,875	37,961	2.3%	
	AGR	-35.0%	23.1%	-3.1%	-1.8%	-2.1%	-2.4%		
<b>Total Computers</b>									
	<b>Total Computers</b>	97,899	108,322	106,884	106,334	105,568	104,729	1.4%	
	AGR	-13.5%	4.1%	-0.2%	0.3%	0.1%	0.1%		
<b>Mobile Phones</b>									
	<b>Standard Phone</b>	5,139	4,541	4,391	4,262	4,128	3,994	-4.9%	
	AGR	25.3%	-11.6%	-3.3%	-2.9%	-3.1%	-3.3%		
	<b>SmartPhones</b>	130,594	124,800	124,861	125,419	125,682	125,808	-0.7%	
	AGR	-6.9%	-4.4%	0.0%	0.4%	0.2%	0.1%		
	<b>Total Mobile Phones</b>	135,733	129,341	129,252	129,681	129,810	129,802	-0.9%	
	AGR	-6.0%	-4.7%	-0.1%	0.3%	0.1%	0.0%		
<b>Total Devices</b>									
	<b>Total Devices</b>	233,632	237,662	236,136	236,015	235,378	234,531	0.1%	
	AGR	-13.6%	1.7%	-0.6%	-0.1%	-0.3%	-0.4%		

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# 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	5,931	5,413	4,959	4,533	4,139	-7.1%	
AGR	AGR	-14.8%	-1.0%	-8.7%	-8.4%	-8.6%	-8.7%		
<b>Mobile PCs</b>									
Traditional Mobile PCs		18,645	20,001.9	20,448.9	20,906.2	21,316.2	21,703.7	3.1%	
AGR	AGR	-13.4%	7.3%	2.2%	2.2%	2.0%	1.8%		
Convertible Mobile PCs		2,300	2,520	2,420	2,364	2,303	2,242	-0.5%	
AGR	AGR	-13.2%	9.6%	-3.9%	-2.3%	-2.6%	-2.7%		
<b>Total Mobile PCs</b>		20,945	22,522	22,869	23,270	23,619	23,945	2.7%	
AGR	AGR	-13.4%	7.5%	1.5%	1.8%	1.5%	1.4%		
<b>Total PCs</b>									
Total PCs		26,935	28,453	28,282	28,229	28,153	28,085	0.8%	
AGR	AGR	-13.7%	5.6%	-0.6%	-0.2%	-0.3%	-0.2%		
<b>Tablets</b>									
Detachable		15,929	18,419	18,775	19,153	19,391	19,523	4.2%	
AGR	AGR	-18.5%	15.6%	1.9%	2.0%	1.2%	0.7%		
Slate		13,752	18,554	16,799	15,827	14,870	13,951	0.3%	
AGR	AGR	-46.5%	34.9%	-9.5%	-5.8%	-6.0%	-6.2%		
<b>Total Tablets</b>		29,681	36,973	35,574	34,980	34,261	33,474	2.4%	
AGR	AGR	-34.4%	24.6%	-3.8%	-1.7%	-2.1%	-2.3%		
<b>Total Computers</b>									
Total Computers		56,616	65,425	63,856	63,210	62,414	61,559	1.7%	
AGR	AGR	-13.7%	5.6%	-0.6%	-0.2%	-0.3%	-0.2%		
<b>Mobile Phones</b>									
Standard Phone		5,067	4,488	4,337	4,208	4,072	3,937	-4.9%	
AGR	AGR	25.3%	-11.4%	-3.4%	-3.0%	-3.2%	-3.3%		
SmartPhones		118,891	113,241	113,249	113,706	113,896	113,961	-0.8%	
AGR	AGR	-7.1%	-4.8%	0.0%	0.4%	0.2%	0.1%		
<b>Total Mobile Phones</b>		123,958	117,729	117,586	117,913	117,968	117,898	-1.0%	
AGR	AGR	-6.1%	-5.0%	-0.1%	0.3%	0.0%	-0.1%		
<b>Total Devices</b>									
Total Devices		180,575	183,155	181,442	181,123	180,382	179,457	-0.1%	
AGR	AGR	-13.4%	1.4%	-0.9%	-0.2%	-0.4%	-0.5%		

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# 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	7,564	7,229	6,936	6,640	6,349	-3.7%	
AGR	AGR	-14.9%	-1.6%	-4.4%	-4.0%	-4.3%	-4.4%		
<b>Mobile PCs</b>									
Traditional Mobile PCs		24,254	25,380.8	25,226.9	25,252.9	25,226.5	25,178.7	0.8%	
AGR	AGR	-11.8%	4.6%	-0.6%	0.1%	-0.1%	-0.2%		
Convertible Mobile PCs		5,100	5,167	5,700	6,191	6,674	7,155	7.0%	
AGR	AGR	-17.9%	1.3%	10.3%	8.6%	7.8%	7.2%		
<b>Total Mobile PCs</b>		29,353	30,548	30,927	31,444	31,900	32,334	2.0%	
AGR	AGR	-12.9%	4.1%	1.2%	1.7%	1.5%	1.4%		
<b>Total PCs</b>									
Total PCs		37,037	38,112	38,156	38,380	38,540	38,683	0.9%	
AGR	AGR	-13.3%	2.9%	0.1%	0.6%	0.4%	0.4%		
<b>Tablets</b>									
Detachable		3,304	4,069	3,894	3,742	3,587	3,434	0.8%	
AGR	AGR	-32.3%	23.2%	-4.3%	-3.9%	-4.1%	-4.3%		
Slate		942	715	977	1,002	1,027	1,053	2.3%	
AGR	AGR	-54.0%	-24.1%	36.7%	2.6%	2.5%	2.5%		
<b>Total Tablets</b>		4,246	4,784	4,872	4,744	4,614	4,487	1.1%	
AGR	AGR	-38.7%	12.7%	1.8%	-2.6%	-2.7%	-2.8%		
<b>Total Computers</b>									
Total Computers		41,283	42,896	43,028	43,124	43,154	43,170	0.9%	
AGR	AGR	-13.3%	2.9%	0.1%	0.6%	0.4%	0.4%		
<b>Mobile Phones</b>									
Standard Phone		73	53	54	55	56	57	-4.8%	
AGR	AGR	25.3%	-27.7%	1.8%	2.2%	2.0%	1.9%		
SmartPhones		11,702	11,559	11,612	11,713	11,786	11,847	0.2%	
AGR	AGR	-4.4%	-1.2%	0.5%	0.9%	0.6%	0.5%		
<b>Total Mobile Phones</b>		11,775	11,611	11,666	11,767	11,842	11,904	0.2%	
AGR	AGR	-4.2%	-1.4%	0.5%	0.9%	0.6%	0.5%		
<b>Total Devices</b>									
Total Devices		53,058	54,508	54,694	54,892	54,996	55,074	0.7%	
AGR	AGR	-14.3%	2.7%	0.3%	0.4%	0.2%	0.1%		

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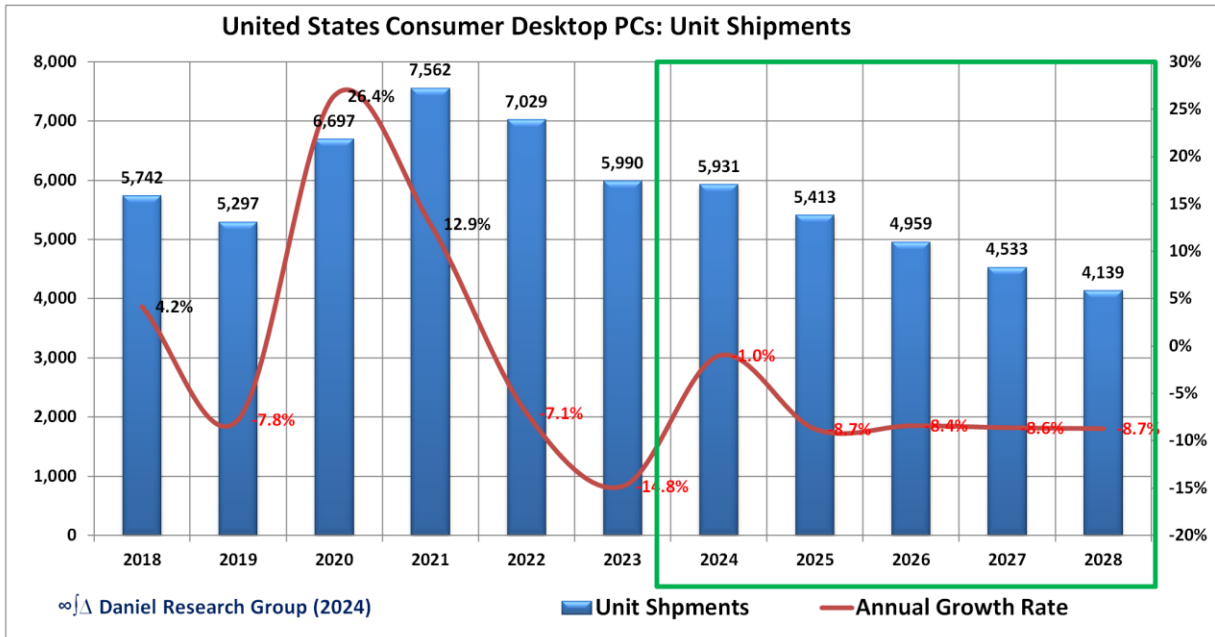
# Product Forecast Tables and Charts

## Desktop PCs

### Consumer

United States Consumer Desktop PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	5,990	5,931	5,413	4,959	4,533	4,139	-8.6%	
AGR	-14.8%	-1.0%	-8.7%	-8.4%	-8.6%	-8.7%		
Revenue (\$M)	7,268	7,298	6,843	6,443	6,051	5,677	-6.1%	
AGR	-16.0%	0.4%	-6.2%	-5.9%	-6.1%	-6.2%		
Average Price (\$)	1,213	1,231	1,264	1,299	1,335	1,371	2.7%	
AGR	-1.5%	1.4%	2.7%	2.7%	2.7%	2.7%		
Installed Base (K)	18,104	17,263	16,406	15,506	14,586	13,662	-5.7%	
AGR	-2.9%	-4.6%	-5.0%	-5.5%	-5.9%	-6.3%		
Removal Age (Y)	4.04	3.93	3.99	4.07	4.16	4.28	2.1%	
AGR	2.2%	-2.9%	1.6%	2.0%	2.3%	2.7%		
Average Installed Base Age (Y)	3.99	4.03	4.10	4.18	4.26	4.33	1.8%	
AGR	0.5%	1.1%	1.7%	1.9%	1.9%	1.7%		
Replacement Cycle Length (Y)	3.77	3.55	3.62	3.65	3.67	3.70	1.0%	
AGR	2.7%	-5.8%	1.9%	0.8%	0.8%	0.6%		
Units per Households (#)	1.00	1.00	1.00	1.01	1.04	1.07	1.7%	
AGR				1.4%	2.3%	3.0%		
Market Penetration (%)	13.6%	12.9%	12.1%	11.2%	10.2%	9.2%	Change '20-'25	Trend
							-4.4%	

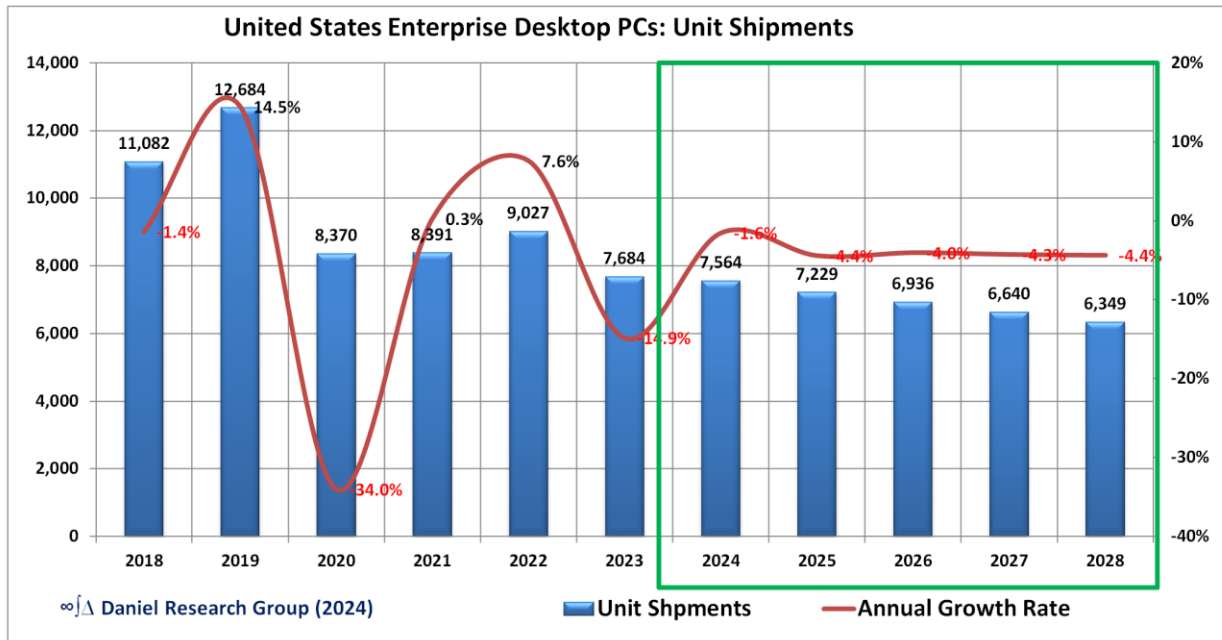
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# Enterprise

United States Enterprise Desktop PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	7,684	7,564	7,229	6,936	6,640	6,349	-4.3%	
AGR	-14.9%	-1.6%	-4.4%	-4.0%	-4.3%	-4.4%		
Revenue (\$M)	5,950	6,090	5,971	5,878	5,773	5,663	-1.8%	
AGR	-20.1%	2.4%	-1.9%	-1.6%	-1.8%	-1.9%		
Average Price (\$)	774	805	826	847	869	892	2.6%	
AGR	-6.1%	4.0%	2.6%	2.6%	2.6%	2.6%		
Installed Base (K)	27,709	25,657	23,879	22,339	20,993	19,795	-6.3%	
AGR	-8.2%	-7.4%	-6.9%	-6.4%	-6.0%	-5.7%		
Removal Age (Y)	4.82	4.75	4.69	4.61	4.53	4.46	-1.6%	
AGR	1.4%	-1.5%	-1.3%	-1.7%	-1.8%	-1.5%		
Average Installed Base Age (Y)	4.62	4.59	4.54	4.48	4.43	4.37	-1.2%	
AGR	0.2%	-0.8%	-1.1%	-1.3%	-1.2%	-1.2%		
Replacement Cycle Length (Y)	3.73	3.67	3.65	3.64	3.63	3.62	-0.3%	
AGR	1.1%	-1.6%	-0.5%	-0.4%	-0.2%	-0.2%		
Units per Businesses (#)	11.38	11.75	12.50	13.38	14.55	16.01	8.0%	
AGR	0.9%	3.2%	6.4%	7.0%	8.7%	10.0%		
Market Penetration (%)	36.0%	31.7%	27.7%	24.0%	20.7%	17.7%	-18.3%	
AGR								

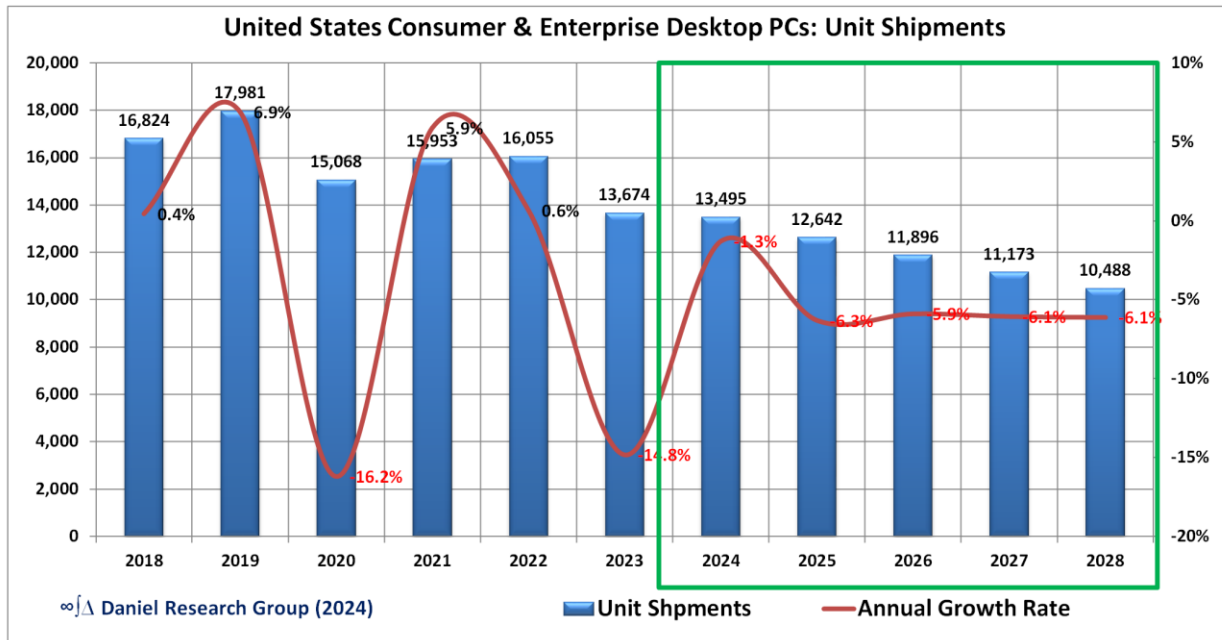
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# Total Desktop PCs

United States Consumer & Enterprise Desktop PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	13,674	13,495	12,642	11,896	11,173	10,488	-6.1%	
AGR	-14.8%	-1.3%	-6.3%	-5.9%	-6.1%	-6.1%		
Revenue (\$M)	13,218	13,388	12,815	12,321	11,823	11,340	-4.1%	
AGR	-17.9%	1.3%	-4.3%	-3.9%	-4.0%	-4.1%		
Average Price (\$)	967	992	1,014	1,036	1,058	1,081	2.2%	
AGR	-3.6%	2.6%	2.2%	2.2%	2.2%	2.2%		
Installed Base (K)	45,813	42,920	40,284	37,845	35,579	33,456	-6.0%	
AGR	-6.2%	-6.3%	-6.1%	-6.1%	-6.0%	-6.0%		
Removal Age (Y)	4.52	4.42	4.40	4.39	4.38	4.38	-0.2%	
AGR	1.6%	-2.2%	-0.3%	-0.4%	-0.2%	0.2%		
Average Installed Base Age (Y)	4.37	4.36	4.36	4.35	4.36	4.36	0.0%	
AGR	0.1%	-0.2%	-0.1%	-0.1%	0.0%	0.0%		
Replacement Cycle Length (Y)	3.74	3.62	3.64	3.64	3.65	3.65	0.2%	
AGR	1.7%	-3.3%	0.5%	0.1%	0.2%	0.1%		
Units per Households & Businesses (#)	2.23	2.21	2.20	2.23	2.29	2.39	2.0%	
AGR	-2.6%	-1.1%	-0.3%	1.4%	2.9%	4.0%		
Market Penetration (%)	14.7%	13.8%	12.9%	11.8%	10.7%	9.6%	Change '20-'25	Trend
							-5.1%	

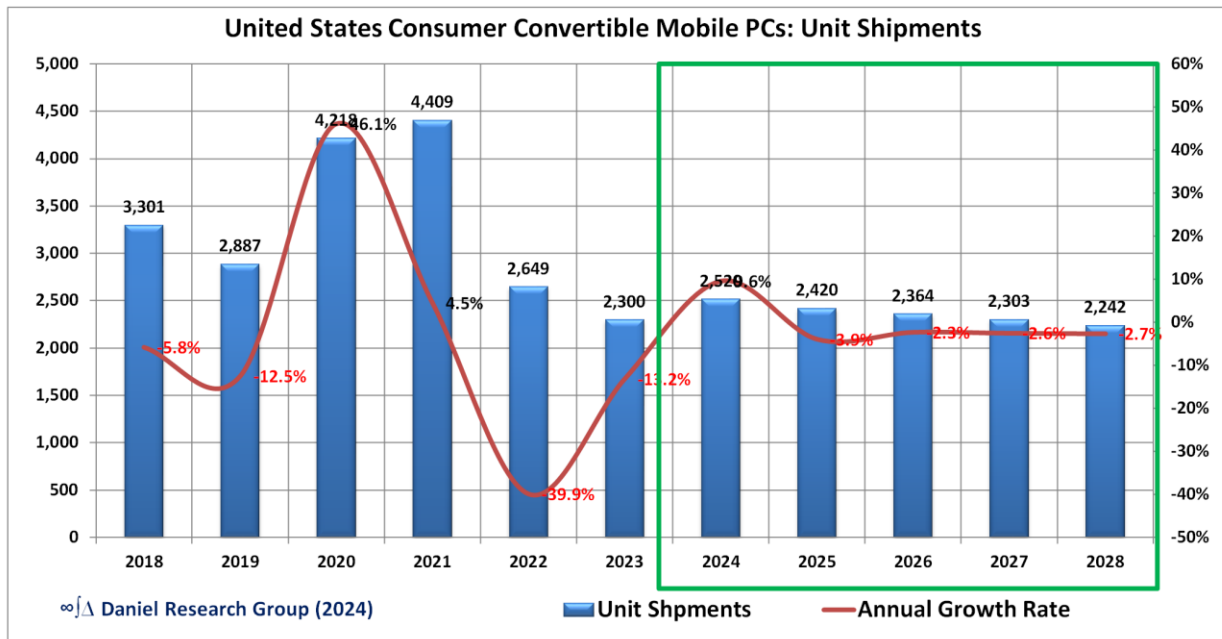
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# Mobile PC Consumer Convertible

United States Consumer Convertible Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	2,300	2,520	2,420	2,364	2,303	2,242	-2.9%	
AGR	-13.2%	9.6%	-3.9%	-2.3%	-2.6%	-2.7%		
Revenue (\$M)	1,554	2,279	2,224	2,206	2,183	2,158	-1.4%	
AGR	-25.8%	46.6%	-2.4%	-0.8%	-1.0%	-1.1%		
Average Price (\$)	676	905	919	933	948	963	1.6%	
AGR	-14.5%	33.8%	1.6%	1.6%	1.6%	1.6%		
Installed Base (K)	10,560	10,167	9,712	9,252	8,806	8,388	-4.7%	
AGR	-4.6%	-3.7%	-4.5%	-4.7%	-4.8%	-4.8%		
Removal Age (Y)	3.96	4.16	4.43	4.62	4.76	4.84	3.8%	
AGR	13.6%	5.2%	6.4%	4.3%	3.0%	1.7%		
Average Installed Base Age (Y)	3.99	4.24	4.42	4.54	4.59	4.61	2.1%	
AGR	10.7%	6.2%	4.3%	2.6%	1.3%	0.3%		
Replacement Cycle Length (Y)	4.76	4.49	4.38	4.28	4.20	4.15	-1.9%	
AGR	1.9%	-5.7%	-2.5%	-2.3%	-1.7%	-1.2%		
Units per Households (#)	1.00	1.00	1.00	1.00	1.00	1.00	0.0%	
AGR		0.2%	0.1%	0.0%	0.0%	-0.1%		
Market Penetration (%)	7.9%	7.6%	7.1%	6.7%	6.4%	6.0%	-1.9%	
AGR								

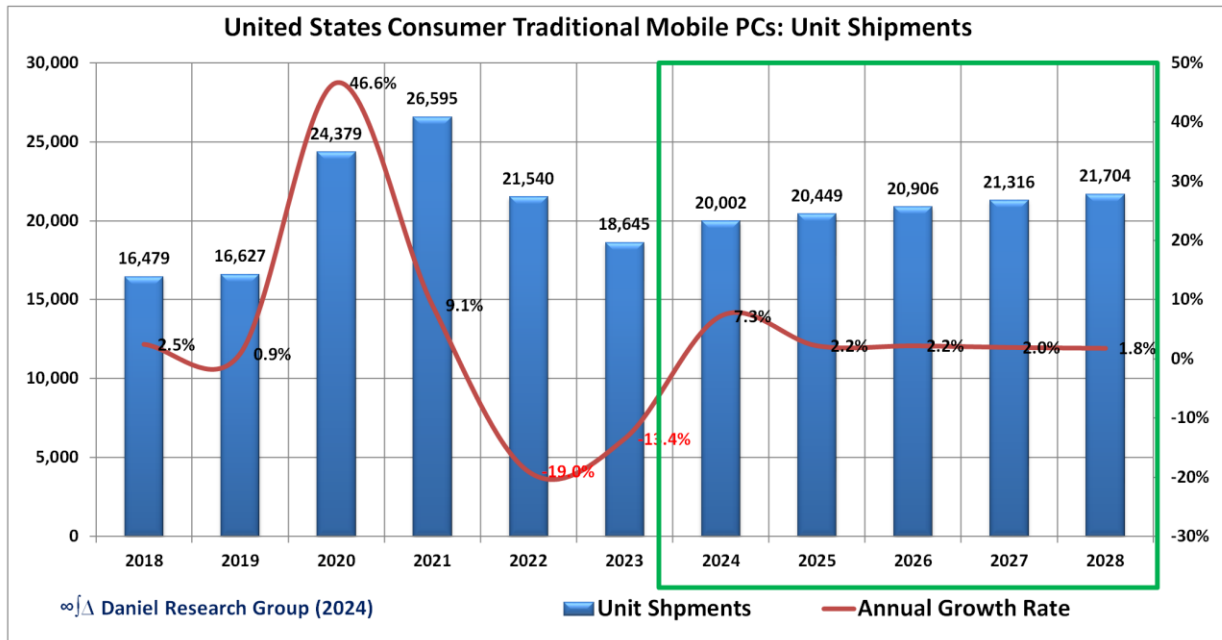
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# Consumer Traditional

United States Consumer Traditional Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	18,645	20,002	20,449	20,906	21,316	21,704	2.1%	
AGR	-13.4%	7.3%	2.2%	2.2%	2.0%	1.8%		
Revenue (\$M)	21,971	23,883	26,204	28,750	31,459	34,376	9.5%	
AGR	-14.3%	8.7%	9.7%	9.7%	9.4%	9.3%		
Average Price (\$)	1,178	1,194	1,281	1,375	1,476	1,584	7.3%	
AGR	-1.0%	1.3%	7.3%	7.3%	7.3%	7.3%		
Installed Base (K)	89,927	89,216	88,673	88,323	88,230	88,440	-0.2%	
AGR	-0.5%	-0.8%	-0.6%	-0.4%	-0.1%	0.2%		
Removal Age (Y)	1.02	1.04	1.03	1.02	1.00	0.99	-1.1%	
AGR	12.0%	1.3%	-0.9%	-1.0%	-1.2%	-1.4%		
Average Installed Base Age (Y)	4.24	4.36	4.44	4.47	4.47	4.45	0.5%	
AGR	4.8%	2.9%	1.7%	0.7%	0.0%	-0.5%		
Replacement Cycle Length (Y)	5.72	5.31	5.22	5.16	5.12	5.11	-0.9%	
AGR	2.2%	-7.2%	-1.6%	-1.3%	-0.7%	-0.1%		
Units per Households (#)	1.00	1.00	1.00	1.00	1.00	1.00		
AGR								
Market Penetration (%)	67.6%	66.4%	65.4%	64.6%	63.9%	63.5%	Change '20-'25	Trend
							-4.1%	

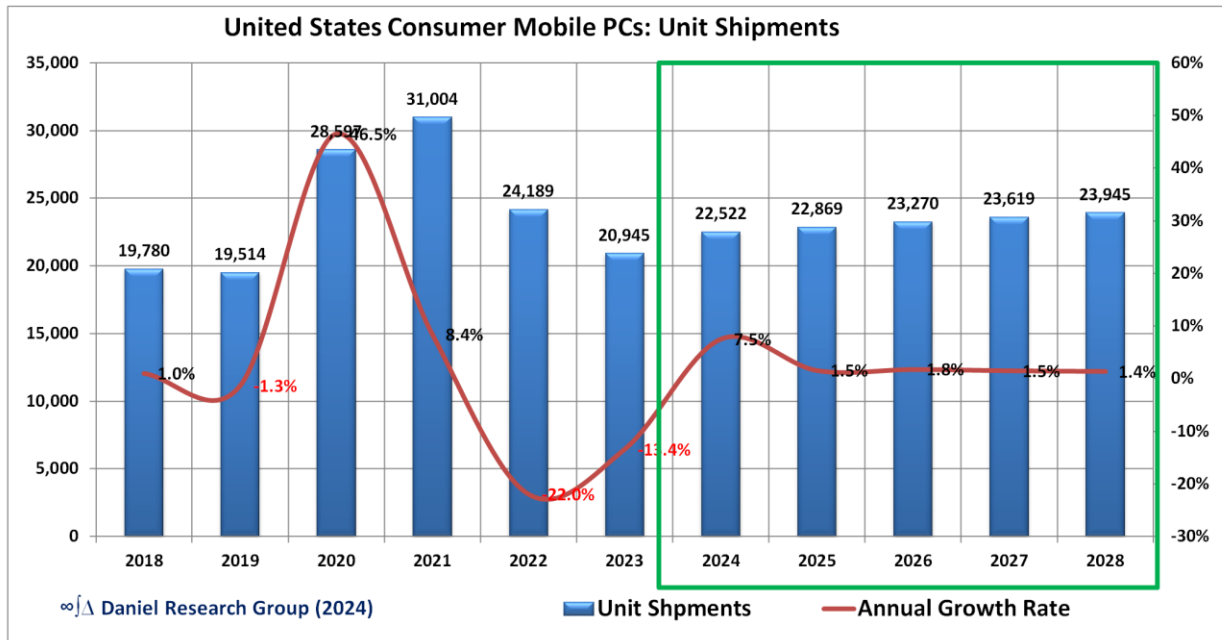
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# Consumer Total

United States Consumer Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	20,945	22,522	22,869	23,270	23,619	23,945	1.5%	
AGR	-13.4%	7.5%	1.5%	1.8%	1.5%	1.4%		
Revenue (\$M)	23,526	26,162	28,427	30,956	33,643	36,534	8.7%	
AGR	-15.2%	11.2%	8.7%	8.9%	8.7%	8.6%		
Average Price (\$)	1,123	1,162	1,243	1,330	1,424	1,526	7.1%	
AGR	-2.0%	3.4%	7.0%	7.0%	7.1%	7.1%		
Installed Base (K)	100,487	99,383	98,385	97,575	97,037	96,827	-0.6%	
AGR	-0.9%	-1.1%	-1.0%	-0.8%	-0.6%	-0.2%		
Removal Age (Y)	4.75	4.82	4.94	5.03	5.09	5.13	1.6%	
AGR	7.6%	1.4%	2.5%	1.8%	1.3%	0.7%		
Average Installed Base Age (Y)	4.20	4.34	4.43	4.48	4.48	4.46	0.7%	
AGR	5.5%	3.3%	2.0%	1.0%	0.1%	-0.4%		
Replacement Cycle Length (Y)	5.60	5.21	5.12	5.05	5.02	5.01	-1.0%	
AGR	2.2%	-6.9%	-1.6%	-1.4%	-0.7%	-0.2%		
Units per Households (#)	1.06	1.05	1.05	1.05	1.05	1.05	-0.2%	
AGR	-0.2%	-0.1%	-0.2%	-0.2%	-0.2%	-0.2%		
Market Penetration (%)	71.6%	70.2%	69.0%	67.9%	67.1%	66.5%	Change '20-'25	Trend
							-5.1%	

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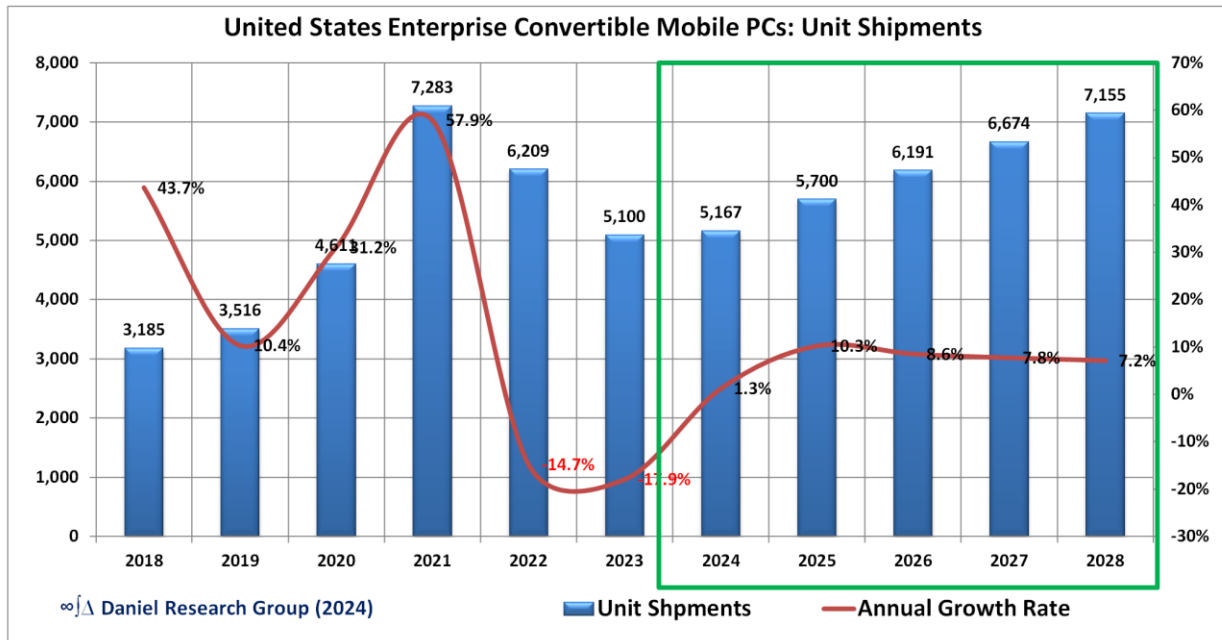




# Enterprise Convertible

United States Enterprise Convertible Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	5,100	5,167	5,700	6,191	6,674	7,155	8.5%	
AGR	-17.9%	1.3%	10.3%	8.6%	7.8%	7.2%		
Revenue (\$M)	3,008	2,978	3,208	3,404	3,584	3,754	6.0%	
AGR	-29.1%	-1.0%	7.8%	6.1%	5.3%	4.7%		
Average Price (\$)	590	576	563	550	537	525	-2.3%	
AGR	-13.7%	-2.3%	-2.3%	-2.3%	-2.3%	-2.3%		
Installed Base (K)	14,479	15,427	16,427	17,448	18,493	19,567	6.1%	
AGR	8.5%	6.5%	6.5%	6.2%	6.0%	5.8%		
Removal Age (Y)	2.73	3.01	3.19	3.32	3.42	3.48	3.7%	
AGR	18.1%	10.2%	5.8%	4.1%	3.0%	1.8%		
Average Installed Base Age (Y)	3.06	3.32	3.49	3.60	3.66	3.69	2.7%	
AGR	11.2%	8.5%	5.2%	3.1%	1.7%	0.8%		
Replacement Cycle Length (Y)	4.66	4.66	4.50	4.38	4.29	4.22	-2.4%	
AGR	9.3%	0.0%	-3.5%	-2.7%	-2.1%	-1.6%		
Units per Businesses (#)	3.48	3.09	2.93	2.86	2.88	2.95	-1.2%	
AGR	-15.3%	-11.2%	-5.3%	-2.4%	0.5%	2.4%		
Market Penetration (%)	61.5%	72.5%	81.3%	87.8%	92.2%	95.1%	33.7%	
Change '20-'25								

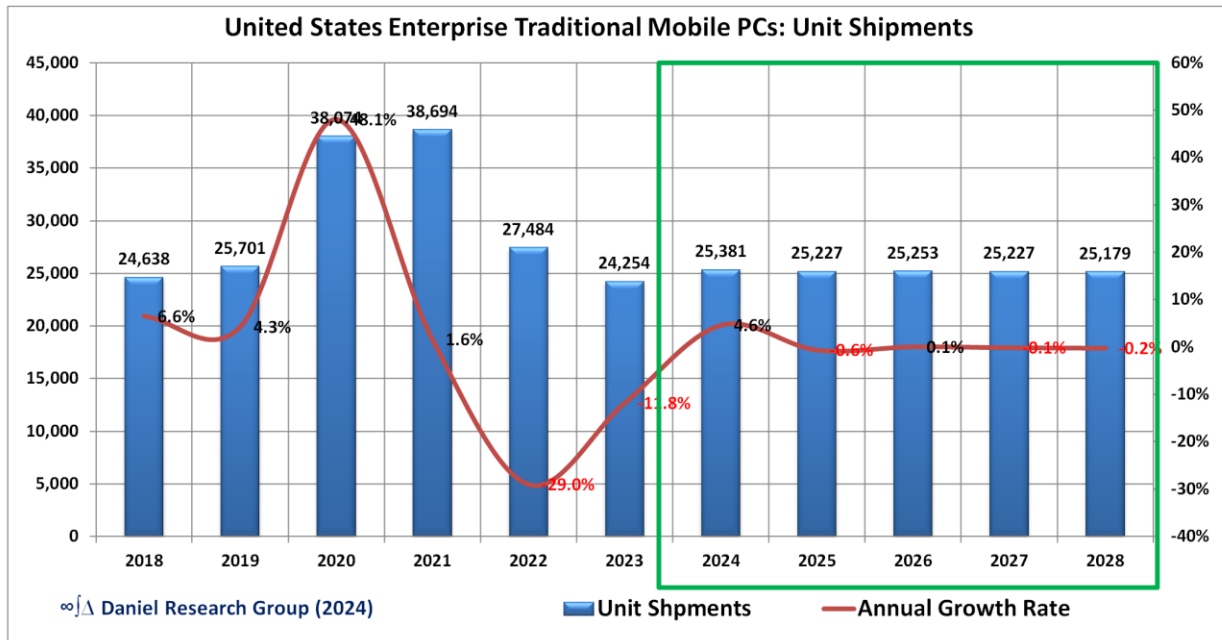
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# Enterprise Traditional

United States Enterprise Traditional Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	24,254	25,381	25,227	25,253	25,227	25,179	-0.2%	
AGR	-11.8%	4.6%	-0.6%	0.1%	-0.1%	-0.2%		
Revenue (\$M)	16,498	17,444	17,519	17,719	17,885	18,037	0.8%	
AGR	-17.9%	5.7%	0.4%	1.1%	0.9%	0.9%		
Average Price (\$)	680	687	694	702	709	716	1.0%	
AGR	-7.0%	1.0%	1.0%	1.0%	1.0%	1.0%		
Installed Base (K)	93,587	97,630	100,673	102,911	104,429	105,303	1.9%	
AGR	4.8%	4.3%	3.1%	2.2%	1.5%	0.8%		
Removal Age (Y)	4.60	4.63	4.72	4.79	4.88	4.97	1.8%	
AGR	15.8%	0.7%	1.9%	1.5%	1.7%	1.9%		
Average Installed Base Age (Y)	4.06	4.10	4.15	4.21	4.27	4.32	1.3%	
AGR	1.2%	0.9%	1.4%	1.5%	1.4%	1.1%		
Replacement Cycle Length (Y)	5.69	5.58	5.54	5.47	5.40	5.33	-1.1%	
AGR	49.8%	-2.0%	-0.7%	-1.2%	-1.2%	-1.3%		
Units per Businesses (#)	17.63	17.83	18.11	18.13	18.12	18.05	0.3%	
AGR	0.8%	1.1%	1.6%	0.1%	-0.1%	-0.4%		
Market Penetration (%)	78.5%	79.6%	80.7%	81.7%	82.6%	83.6%	Change '20-'25	Trend
							5.0%	

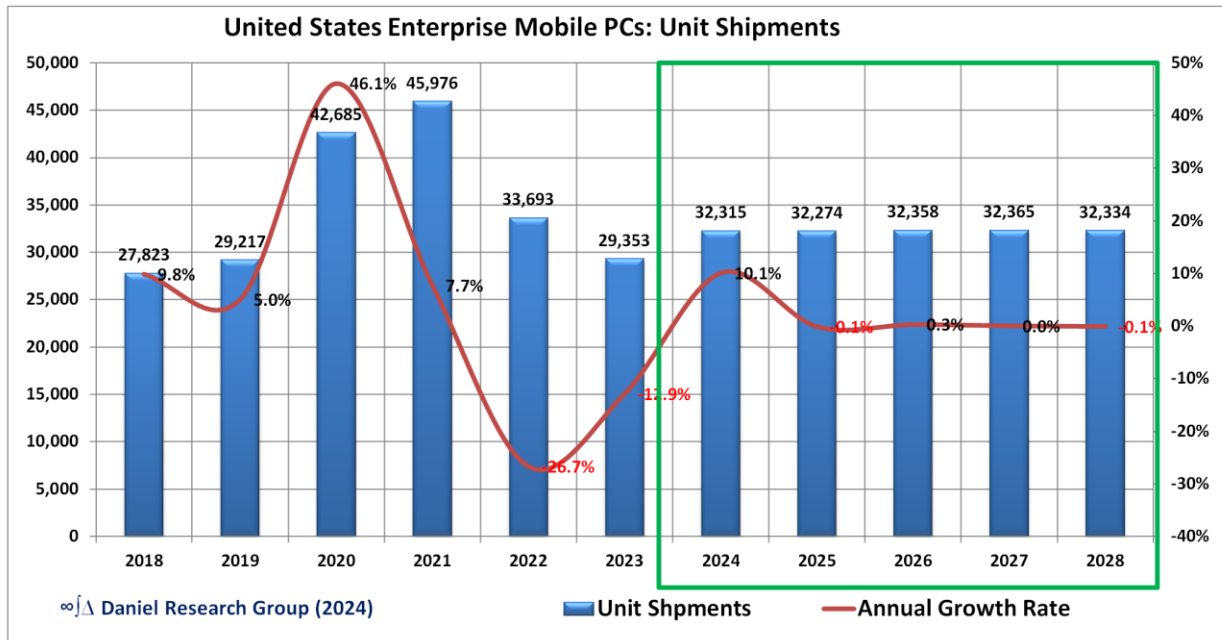
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# Enterprise Total

United States Enterprise Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	29,353	32,315	32,274	32,358	32,365	32,334	0.0%	
AGR	-12.9%	10.1%	-0.1%	0.3%	0.0%	-0.1%		
<b>Revenue (\$M)</b>	19,506	23,007	23,277	23,638	23,944	24,223	1.3%	
AGR	-19.9%	17.9%	1.2%	1.6%	1.3%	1.2%		
<b>Average Price (\$)</b>	665	712	721	731	740	749	1.3%	
AGR	-8.0%	7.1%	1.3%	1.3%	1.3%	1.3%		
<b>Installed Base (K)</b>	108,066	114,007	118,664	122,222	124,795	126,493	2.6%	
AGR	5.3%	5.5%	4.1%	3.0%	2.1%	1.4%		
<b>Removal Age (Y)</b>	4.33	4.31	4.40	4.48	4.57	4.66	2.0%	
AGR	15.0%	-0.5%	2.1%	1.8%	2.0%	2.1%		
<b>Average Installed Base Age (Y)</b>	3.92	3.95	4.01	4.07	4.14	4.19	1.5%	
AGR	1.8%	0.8%	1.4%	1.6%	1.6%	1.4%		
<b>Replacement Cycle Length (Y)</b>	5.52	5.32	5.30	5.24	5.19	5.13	-0.9%	
AGR	43.3%	-3.6%	-0.5%	-1.0%	-1.0%	-1.2%		
<b>Units per Businesses (#)</b>	16.55	17.05	17.61	17.90	18.15	18.32	1.8%	
AGR	1.9%	3.0%	3.3%	1.7%	1.4%	1.0%		
<b>Market Penetration (%)</b>	96.6%	97.2%	97.8%	98.2%	98.6%	98.9%	Change '20-'25	Trend
							2.3%	

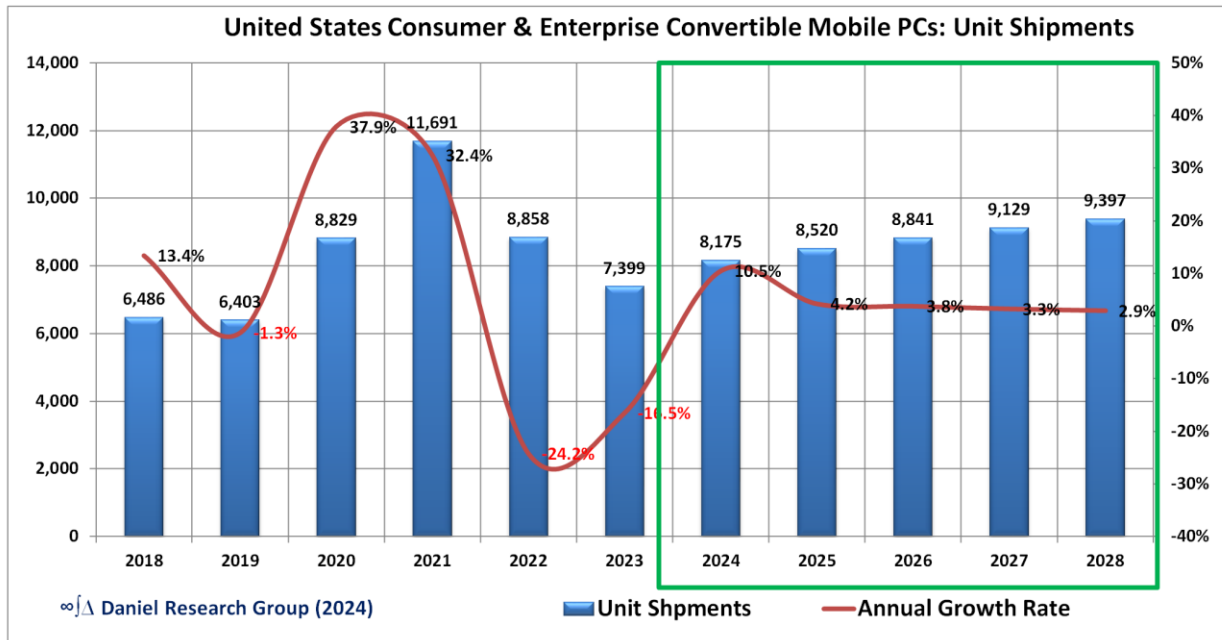
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# Total Convertible Mobile PCs

United States Consumer & Enterprise Convertible Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	7,399	8,175	8,520	8,841	9,129	9,397	3.5%	
AGR	-16.5%	10.5%	4.2%	3.8%	3.3%	2.9%		
Revenue (\$M)	4,563	6,306	6,601	6,890	7,159	7,415	4.1%	
AGR	-28.0%	38.2%	4.7%	4.4%	3.9%	3.6%		
Average Price (\$)	617	771	775	779	784	789	0.6%	
AGR	-13.8%	25.1%	0.4%	0.6%	0.6%	0.6%		
Installed Base (K)	25,039	25,594	26,139	26,700	27,300	27,955	2.2%	
AGR	2.6%	2.2%	2.1%	2.1%	2.2%	2.4%		
Removal Age (Y)	3.23	3.38	3.56	3.69	3.79	3.86	3.4%	
AGR	15.6%	4.7%	5.3%	3.7%	2.7%	1.8%		
Average Installed Base Age (Y)	3.45	3.66	3.81	3.89	3.93	3.95	1.9%	
AGR	10.2%	6.3%	3.9%	2.2%	1.1%	0.3%		
Replacement Cycle Length (Y)	4.70	4.36	4.28	4.22	4.20	4.20	-0.9%	
AGR	6.0%	-7.3%	-1.9%	-1.2%	-0.6%	-0.1%		
Units per Households & Businesses (#)	1.70	1.69	1.71	1.74	1.79	1.86	2.4%	
AGR	-0.2%	-0.6%	1.1%	1.9%	3.0%	3.8%		
Market Penetration (%)	10.5%	10.7%	10.7%	10.7%	10.5%	10.3%	Change '20-'25	Trend
							-0.3%	

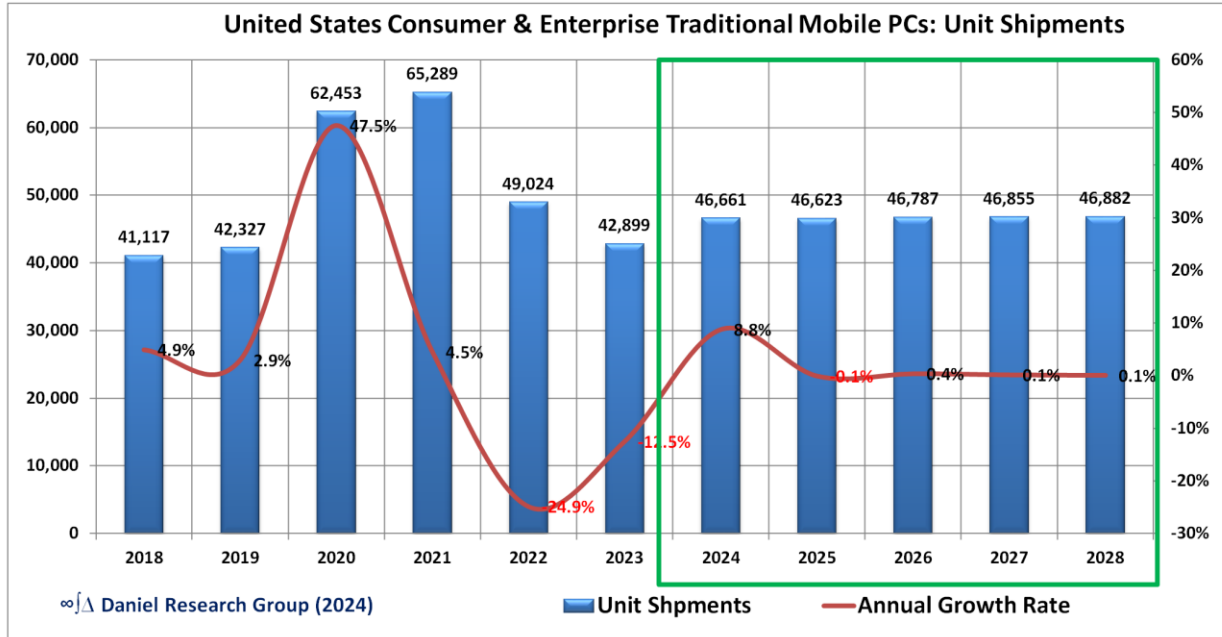
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# Total Traditional Mobile PCs

United States Consumer & Enterprise Traditional Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	42,899	46,661	46,623	46,787	46,855	46,882	0.1%	
AGR	-12.5%	8.8%	-0.1%	0.4%	0.1%	0.1%		
Revenue (\$M)	38,469	42,863	45,103	47,704	50,428	53,342	5.6%	
AGR	-15.9%	11.4%	5.2%	5.8%	5.7%	5.8%		
Average Price (\$)	897	919	967	1,020	1,076	1,138	5.5%	
AGR	-3.9%	2.4%	5.3%	5.4%	5.6%	5.7%		
Installed Base (K)	183,514	187,796	190,910	193,097	194,532	195,366	1.0%	
AGR	2.2%	2.3%	1.7%	1.1%	0.7%	0.4%		
Removal Age (Y)	4.71	4.72	4.82	4.90	4.97	5.05	1.7%	
AGR	11.9%	0.2%	2.1%	1.7%	1.6%	1.5%		
Average Installed Base Age (Y)	4.13	4.19	4.26	4.31	4.35	4.38	1.1%	
AGR	3.2%	1.6%	1.5%	1.2%	0.9%	0.6%		
Replacement Cycle Length (Y)	5.70	5.43	5.39	5.33	5.28	5.24	-0.9%	
AGR	27.2%	-4.8%	-0.8%	-1.1%	-0.9%	-0.8%		
Units per Households & Businesses (#)	1.93	1.98	2.03	2.05	2.07	2.07	1.1%	
AGR	2.4%	2.9%	2.2%	1.4%	0.7%	0.1%		
Market Penetration (%)	68.2%	67.1%	66.2%	65.4%	64.8%	64.5%	Change '20-'25	Trend
							-3.7%	

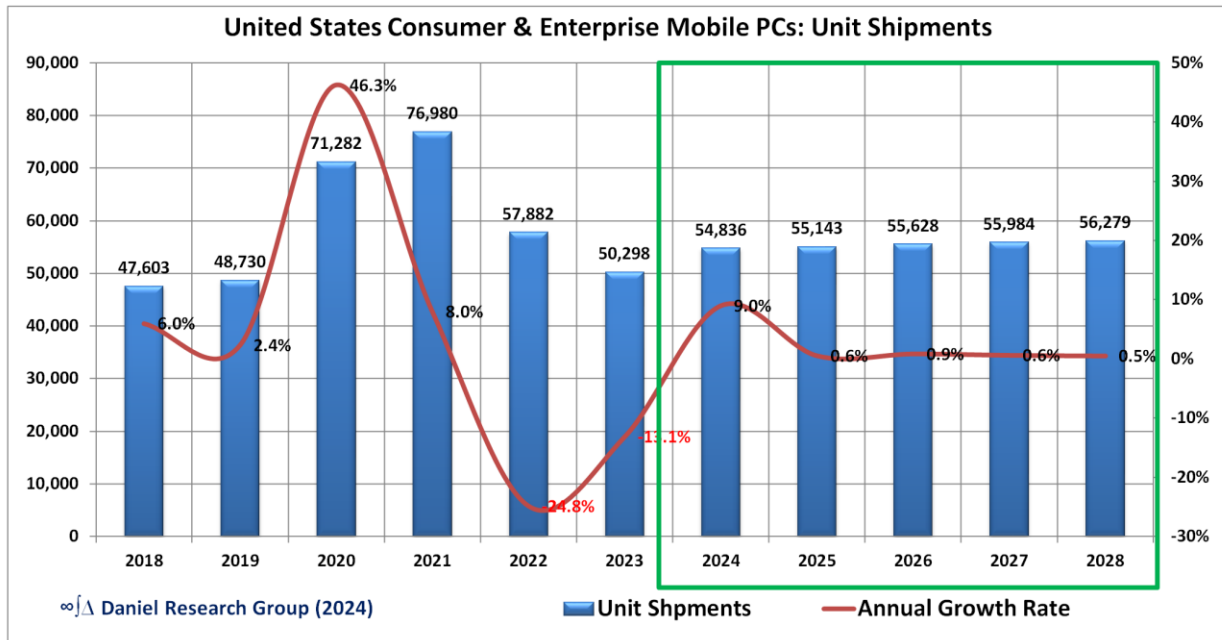
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# Total Mobile PC

United States Consumer & Enterprise Mobile PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	50,298	54,836	55,143	55,628	55,984	56,279	0.7%	
AGR	-13.1%	9.0%	0.6%	0.9%	0.6%	0.5%		
<b>Revenue (\$M)</b>	43,032	49,169	51,704	54,594	57,587	60,757	5.4%	
AGR	-17.4%	14.3%	5.2%	5.6%	5.5%	5.5%		
<b>Average Price (\$)</b>	856	897	938	981	1,029	1,080	4.8%	
AGR	-4.9%	4.8%	4.6%	4.7%	4.8%	5.0%		
<b>Installed Base (K)</b>	208,553	213,390	217,049	219,797	221,832	223,320	1.1%	
AGR	2.2%	2.3%	1.7%	1.3%	0.9%	0.7%		
<b>Removal Age (Y)</b>	4.51	4.52	4.63	4.71	4.79	4.86	1.8%	
AGR	11.8%	0.4%	2.3%	1.8%	1.7%	1.5%		
<b>Average Installed Base Age (Y)</b>	4.04	4.12	4.19	4.25	4.29	4.31	1.1%	
AGR	3.8%	2.1%	1.7%	1.3%	0.9%	0.6%		
<b>Replacement Cycle Length (Y)</b>	5.56	5.27	5.22	5.16	5.11	5.08	-0.9%	
AGR	24.1%	-5.2%	-1.0%	-1.1%	-0.9%	-0.7%		
<b>Units per Households &amp; Businesses (#)</b>	2.05	2.11	2.17	2.20	2.23	2.24	1.5%	
AGR	2.7%	3.1%	2.5%	1.8%	1.2%	0.6%		
<b>Market Penetration (%)</b>	72.8%	71.5%	70.4%	69.4%	68.6%	68.1%	Change '20-'25	Trend
							-4.8%	

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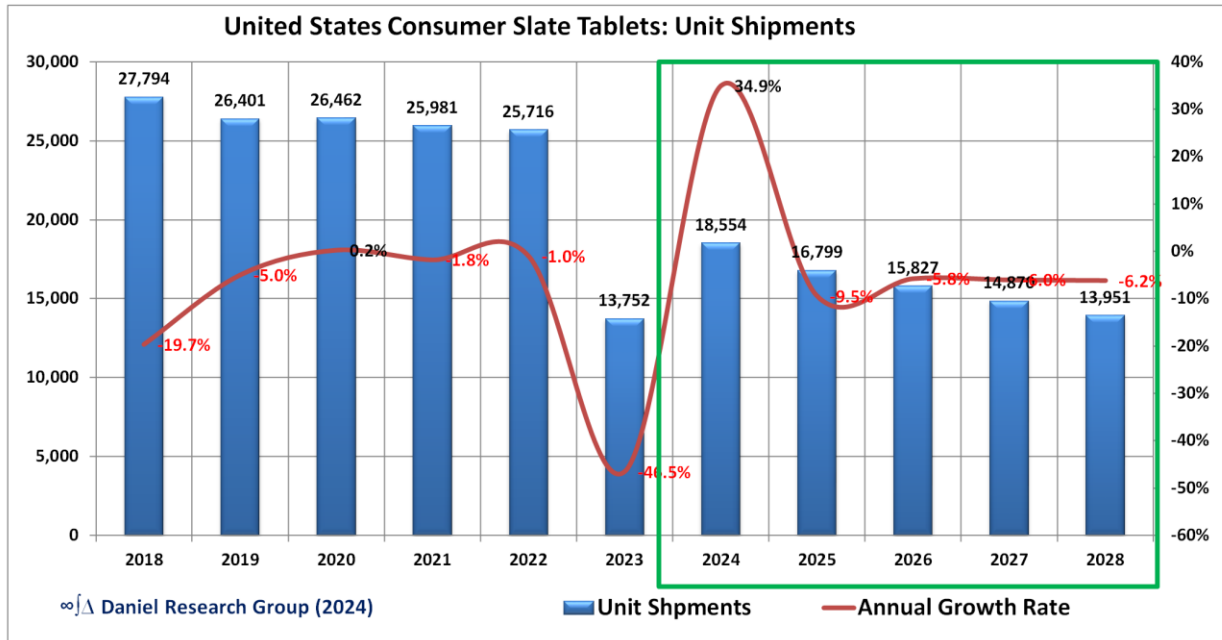


# Tablets

## Consumer Slate

United States Consumer Slate Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	13,752	18,554	16,799	15,827	14,870	13,951	-6.9%	
AGR	-46.5%	34.9%	-9.5%	-5.8%	-6.0%	-6.2%		
<b>Revenue (\$M)</b>	2,911	3,253	3,053	2,982	2,905	2,825	-3.5%	
AGR	-36.7%	11.8%	-6.1%	-2.3%	-2.6%	-2.7%		
<b>Average Price (\$)</b>	212	175	182	188	195	202	3.7%	
AGR	18.4%	-17.2%	3.7%	3.7%	3.7%	3.7%		
<b>Installed Base (K)</b>	117,820	108,754	99,368	90,559	82,612	75,574	-8.7%	
AGR	-10.7%	-7.7%	-8.6%	-8.9%	-8.8%	-8.5%		
<b>Removal Age (Y)</b>	6.25	6.28	6.58	6.70	6.70	6.62	1.3%	
AGR	14.2%	0.5%	4.7%	1.9%	0.0%	-1.2%		
<b>Average Installed Base Age (Y)</b>	5.30	5.40	5.44	5.42	5.37	5.30	-0.4%	
AGR	7.1%	1.9%	0.8%	-0.4%	-1.0%	-1.1%		
<b>Replacement Cycle Length (Y)</b>	5.23	4.94	4.79	4.68	4.62	4.60	-1.8%	
AGR	3.6%	-5.6%	-2.9%	-2.5%	-1.2%	-0.4%		
<b>Units per Households (#)</b>	1.48	1.36	1.23	1.11	1.01	1.00	-7.3%	
AGR	-11.8%	-8.6%	-9.4%	-9.6%	-9.5%	-0.5%		
<b>Market Penetration (%)</b>	59.7%	59.7%	59.6%	59.6%	59.6%	54.3%	Change '20-'25	Trend
							-5.4%	

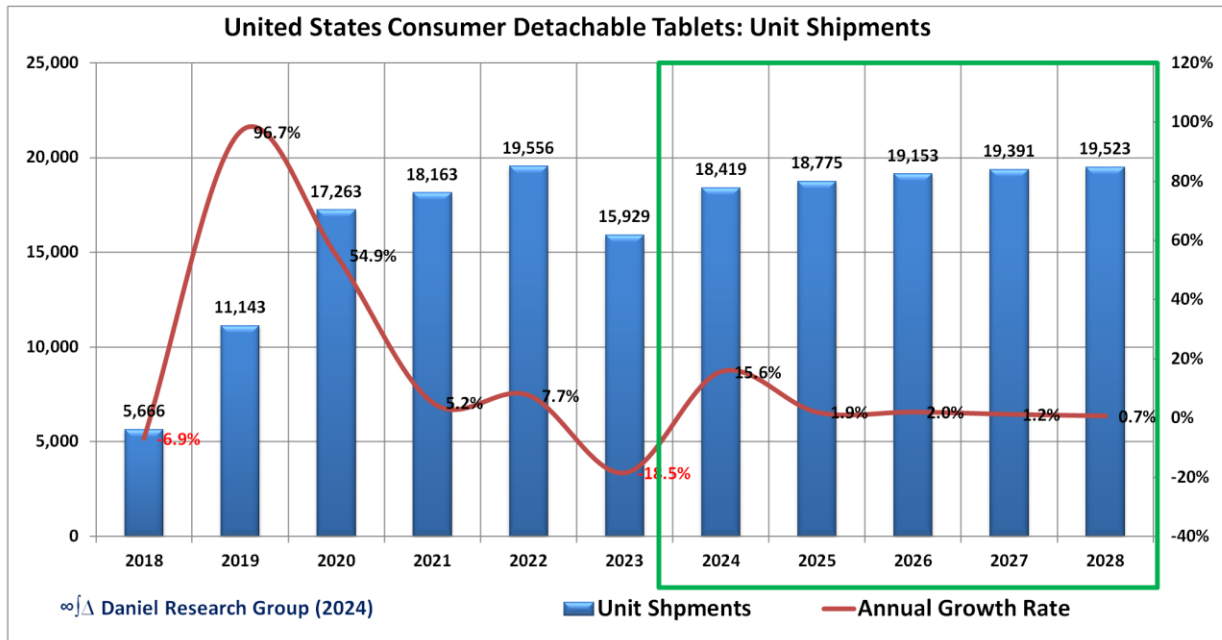
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# Consumer Detachable

United States Consumer Detachable Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	15,929	18,419	18,775	19,153	19,391	19,523	1.5%	
AGR	-18.5%	15.6%	1.9%	2.0%	1.2%	0.7%		
Revenue (\$M)	10,781	12,456	12,897	13,363	13,742	14,053	3.1%	
AGR	-20.3%	15.5%	3.5%	3.6%	2.8%	2.3%		
Average Price (\$)	677	676	687	698	709	720	1.6%	
AGR	-2.2%	-0.1%	1.6%	1.6%	1.6%	1.6%		
Installed Base (K)	57,921	62,050	65,599	68,614	71,229	73,439	4.3%	
AGR	8.4%	7.1%	5.7%	4.6%	3.8%	3.1%		
Removal Age (Y)	3.24	3.37	3.64	3.91	4.09	4.29	6.2%	
AGR	11.3%	4.0%	7.9%	7.2%	4.7%	5.0%		
Average Installed Base Age (Y)	3.24	3.47	3.67	3.83	3.96	4.06	4.0%	
AGR	11.4%	7.3%	5.7%	4.2%	3.4%	2.6%		
Replacement Cycle Length (Y)	6.06	5.34	5.31	5.25	5.25	5.24	-0.5%	
AGR	-14.4%	-11.9%	-0.6%	-1.1%	-0.1%	-0.1%		
Units per Households (#)	2.33	2.26	2.18	2.08	1.97	1.86	-4.8%	
AGR	-2.1%	-2.8%	-3.8%	-4.7%	-5.1%	-5.5%		
Market Penetration (%)	18.7%	20.4%	22.2%	24.2%	26.2%	28.3%	Change '20-'25	Trend
							9.6%	

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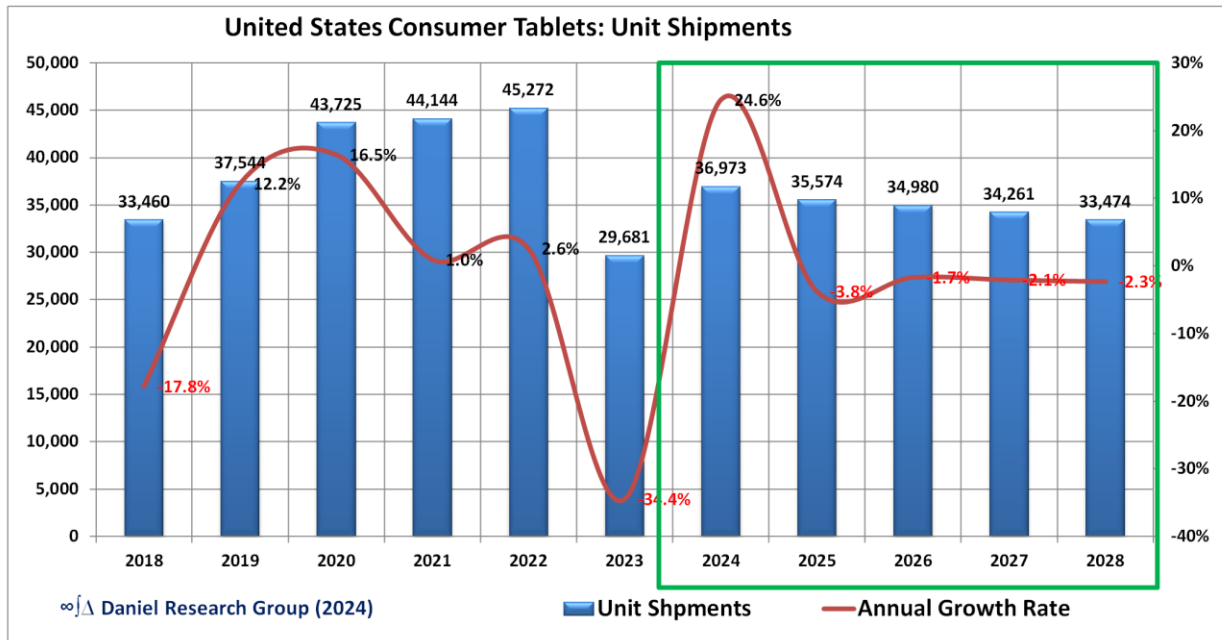




# Consumer Total

United States Consumer Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	29,681	36,973	35,574	34,980	34,261	33,474	-2.5%	
AGR	-34.4%	24.6%	-3.8%	-1.7%	-2.1%	-2.3%		
Revenue (\$M)	13,691	15,709	-	-	-	-		
AGR	-24.5%	14.7%	-100.0%	#DIV/0!	#DIV/0!	#DIV/0!		
Average Price (\$)	461	425	-	-	-	-		
AGR	15.2%	-7.9%	-100.0%	#DIV/0!	#DIV/0!	#DIV/0!		
Installed Base (K)	175,741	170,804	164,966	159,173	153,841	149,013	-3.4%	
AGR	-5.2%	-2.8%	-3.4%	-3.5%	-3.4%	-3.1%		
Removal Age (Y)	5.39	5.34	5.53	5.61	5.60	5.56	1.0%	
AGR	11.2%	-0.9%	3.5%	1.5%	-0.2%	-0.6%		
Average Installed Base Age (Y)	4.64	4.71	4.74	4.73	4.71	4.69	-0.1%	
AGR	5.9%	1.5%	0.6%	-0.2%	-0.4%	-0.4%		
Replacement Cycle Length (Y)	5.47	5.08	4.98	4.90	4.89	4.89	-0.9%	
AGR	-0.1%	-7.3%	-1.8%	-1.6%	-0.4%	0.1%		
Units per Households (#)	1.91	1.82	1.72	1.62	1.53	1.56	-3.7%	
AGR	-7.5%	-4.9%	-5.5%	-5.6%	-5.5%	1.9%		
Market Penetration (%)	69.1%	69.9%	70.8%	71.7%	72.7%	68.5%	Change '20-'25	Trend
							-0.6%	

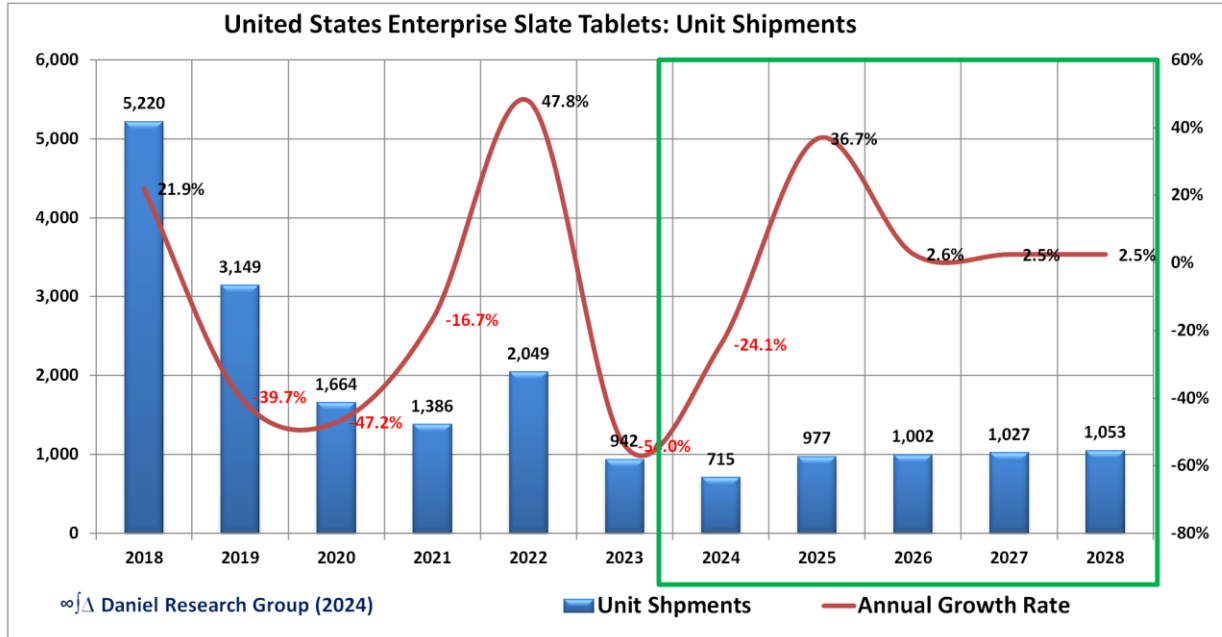
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# Enterprise Slate

United States Enterprise Slate Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	942	715	977	1,002	1,027	1,053	10.2%	
AGR	-54.0%	-24.1%	36.7%	2.6%	2.5%	2.5%		
Revenue (\$M)	300	215	309	334	359	387	15.8%	
AGR	-63.6%	-28.3%	43.7%	7.9%	7.8%	7.8%		
Average Price (\$)	319	301	316	333	350	368	5.1%	
AGR	-20.8%	-5.6%	5.1%	5.1%	5.1%	5.1%		
Installed Base (K)	12,344	10,541	9,165	7,967	6,945	6,159	-12.6%	
AGR	-13.7%	-14.6%	-13.1%	-13.1%	-12.8%	-11.3%		
Removal Age (Y)	7.01	7.65	7.97	8.29	8.46	8.16	1.6%	
AGR	13.6%	9.2%	4.1%	4.0%	2.1%	-3.6%		
Average Installed Base Age (Y)	6.02	6.46	6.64	6.63	6.41	6.09	-1.5%	
AGR	8.5%	7.3%	2.8%	-0.2%	-3.4%	-5.0%		
Replacement Cycle Length (Y)	5.26	5.19	4.89	4.62	4.39	4.35	-4.3%	
AGR	-2.8%	-1.3%	-5.6%	-5.6%	-5.0%	-0.9%		
Units per Businesses (#)	6.73	5.16	4.10	3.25	2.60	2.13	-19.8%	
AGR	-23.4%	-23.4%	-20.5%	-20.8%	-19.9%	-18.0%		
Market Penetration (%)	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
	27.1%	29.7%	32.4%	35.3%	38.3%	41.3%	14.2%	

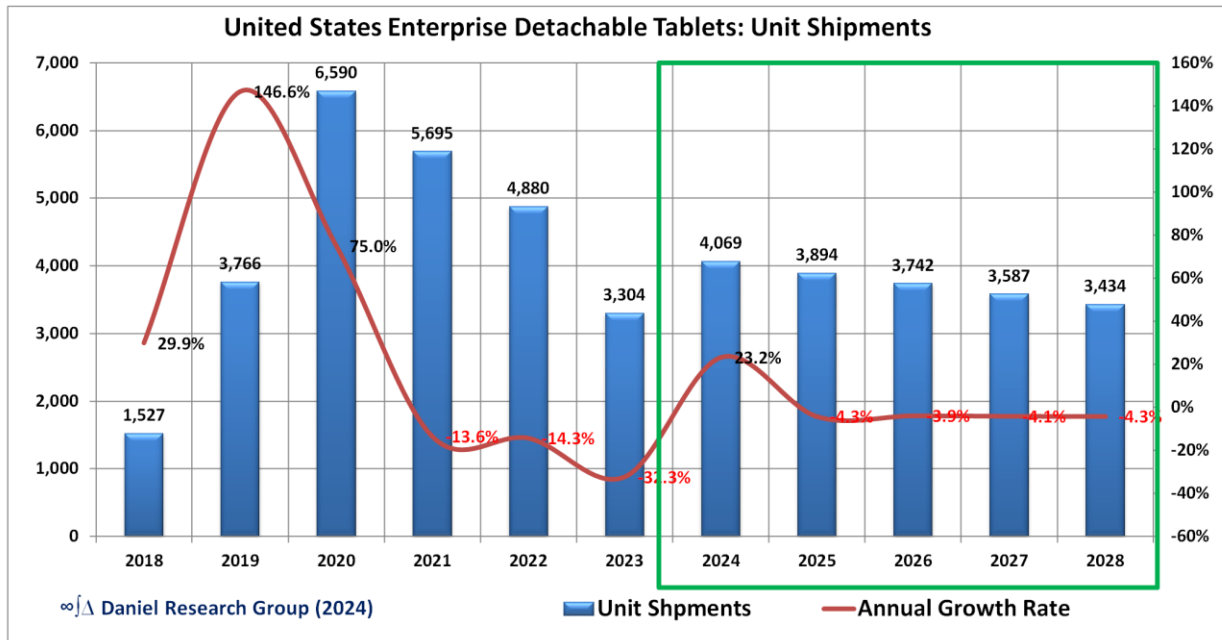
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# Enterprise Detachable

United States Enterprise Detachable Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	3,304	4,069	3,894	3,742	3,587	3,434	-4.2%	
AGR	-32.3%	23.2%	-4.3%	-3.9%	-4.1%	-4.3%		
Revenue (\$M)	2,381	2,947	2,851	2,768	2,682	2,595	-3.1%	
AGR	-25.4%	23.8%	-3.3%	-2.9%	-3.1%	-3.2%		
Average Price (\$)	721	724	732	740	748	756	1.1%	
AGR	10.2%	0.5%	1.1%	1.1%	1.1%	1.1%		
Installed Base (K)	9,350	10,202	10,995	11,489	11,738	11,792	3.7%	
AGR	10.3%	9.1%	7.8%	4.5%	2.2%	0.5%		
Removal Age (Y)	2.60	2.71	3.05	3.34	3.61	3.86	9.3%	
AGR	33.5%	4.1%	12.6%	9.4%	8.1%	6.9%		
Average Installed Base Age (Y)	3.00	3.21	3.40	3.60	3.78	3.94	5.2%	
AGR	12.6%	7.0%	5.9%	5.7%	5.1%	4.3%		
Replacement Cycle Length (Y)	4.85	4.17	4.54	4.54	4.52	4.49	1.9%	
AGR	63.9%	-13.9%	9.0%	-0.2%	-0.5%	-0.6%		
Units per Businesses (#)	11.68	9.82	8.35	6.93	5.74	4.76	-16.6%	
AGR	-16.4%	-16.0%	-14.9%	-17.0%	-17.3%	-17.1%		
Market Penetration (%)	11.8%	15.1%	19.1%	23.8%	29.3%	35.5%	Change '20-'25	Trend
							23.7%	

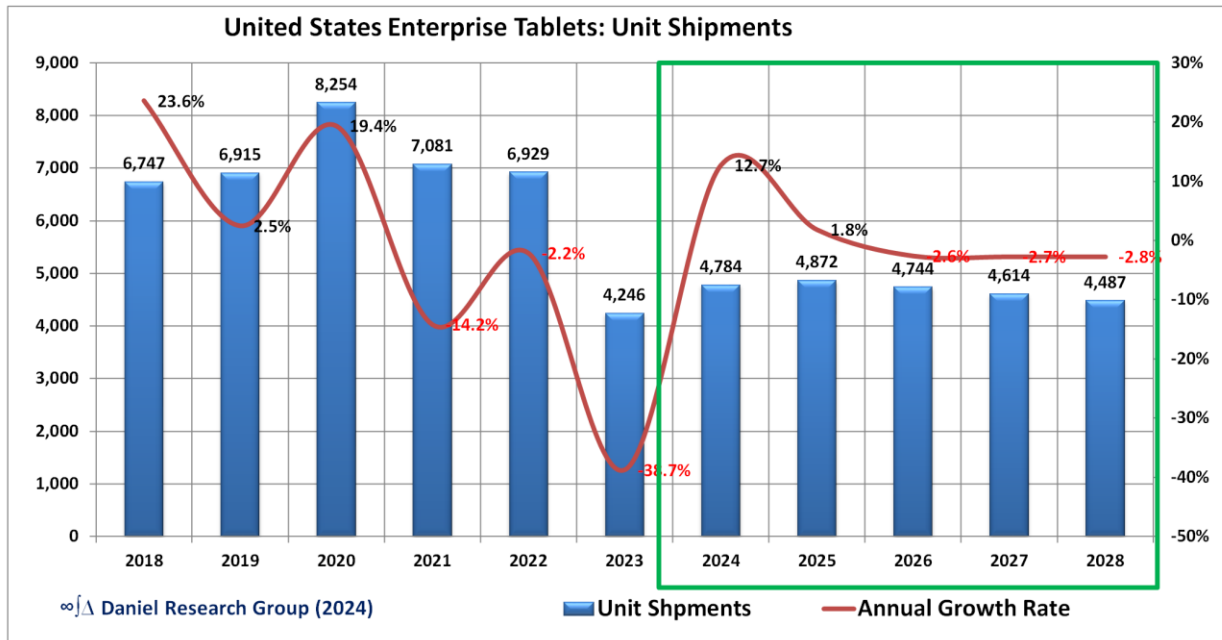
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# Enterprise Total

United States Enterprise Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	4,246	4,784	4,872	4,744	4,614	4,487	-1.6%	
AGR	-38.7%	12.7%	1.8%	-2.6%	-2.7%	-2.8%		
Revenue (\$M)	2,681	3,162	3,160	3,102	3,041	2,983	-1.5%	
AGR	-33.2%	18.0%	-0.1%	-1.8%	-1.9%	-1.9%		
Average Price (\$)	631	661	649	654	659	665	0.1%	
AGR	9.0%	4.7%	-1.9%	0.8%	0.8%	0.8%		
Installed Base (K)	21,694	20,743	20,160	19,456	18,683	17,951	-3.6%	
AGR	-4.8%	-4.4%	-2.8%	-3.5%	-4.0%	-3.9%		
Removal Age (Y)	4.80	4.83	5.00	5.11	5.18	5.14	1.6%	
AGR	20.8%	0.6%	3.5%	2.3%	1.4%	-0.9%		
Average Installed Base Age (Y)	4.40	4.54	4.59	4.61	4.59	4.57	0.2%	
AGR	6.6%	3.3%	1.1%	0.3%	-0.3%	-0.4%		
Replacement Cycle Length (Y)	5.07	4.62	4.70	4.57	4.47	4.44	-1.0%	
AGR	26.5%	-8.9%	1.7%	-2.6%	-2.3%	-0.6%		
Units per Businesses (#)	9.71	8.31	7.37	6.48	5.73	5.11	-11.5%	
AGR	-15.8%	-14.4%	-11.3%	-12.0%	-11.6%	-10.9%		
Market Penetration (%)	33.0%	36.3%	39.7%	43.2%	46.7%	50.3%	Change '20-'25	Trend
							17.3%	

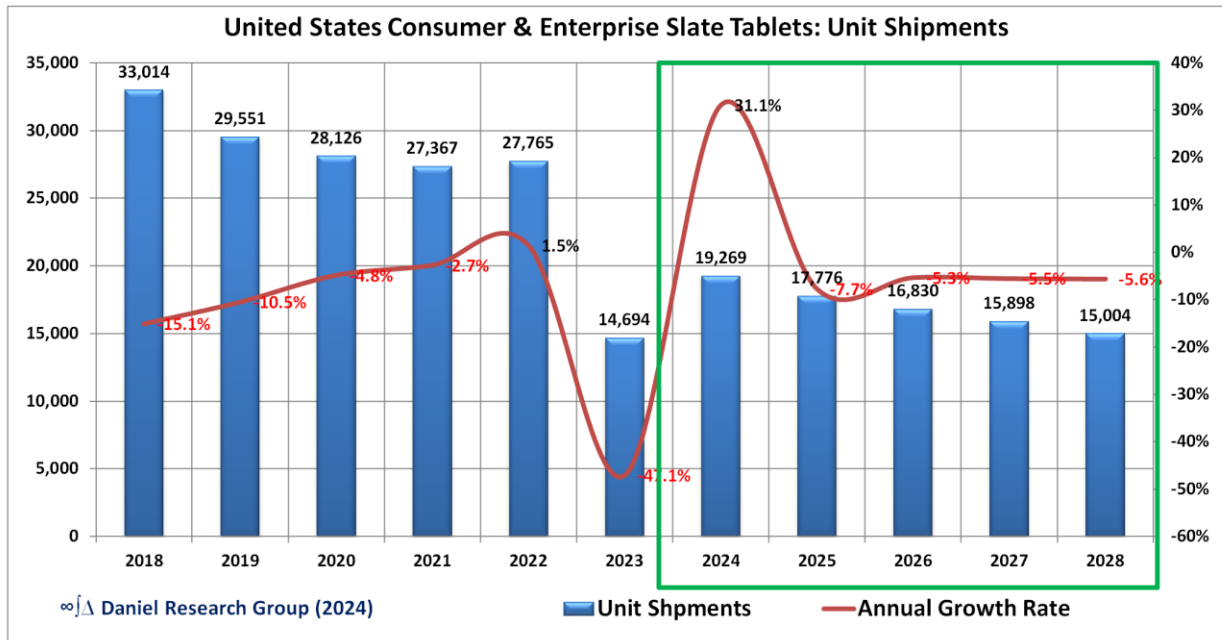
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# Total Slate

United States Consumer & Enterprise Slate Tablets									Trend
	2023	2024	2025	2026	2027	2028	CAGR '24-'28		
Unit Shipments (K)	14,694	19,269	17,776	16,830	15,898	15,004	-6.1%		
AGR	-47.1%	31.1%	-7.7%	-5.3%	-5.5%	-5.6%			
Revenue (\$M)	3,211	3,468	3,363	3,316	3,264	3,212	-1.9%		
AGR	-40.8%	8.0%	-3.0%	-1.4%	-1.6%	-1.6%			
Average Price (\$)	219	180	189	197	205	214	4.4%		
AGR	11.9%	-17.6%	5.1%	4.2%	4.2%	4.3%			
Installed Base (K)	130,164	119,295	108,532	98,527	89,557	81,733	-9.0%		
AGR	-11.0%	-8.4%	-9.0%	-9.2%	-9.1%	-8.7%			
Removal Age (Y)	6.33	6.40	6.70	6.83	6.84	6.73	1.3%		
AGR	14.1%	1.3%	4.6%	2.0%	0.1%	-1.5%			
Average Installed Base Age (Y)	5.37	5.49	5.54	5.51	5.44	5.36	-0.6%		
AGR	7.2%	2.3%	0.8%	-0.5%	-1.3%	-1.5%			
Replacement Cycle Length (Y)	5.23	4.96	4.80	4.67	4.60	4.58	-2.0%		
AGR	3.0%	-5.3%	-3.1%	-2.7%	-1.5%	-0.5%			
Units per Households & Businesses (#)	1.60	1.45	1.31	1.17	1.06	1.04	-7.9%		
AGR	-12.3%	-9.4%	-10.0%	-10.2%	-10.0%	-1.3%			
Market Penetration (%)	58.2%	58.2%	58.3%	58.4%	58.5%	58.5%	Change '20-'25	Trend	
							-4.5%		

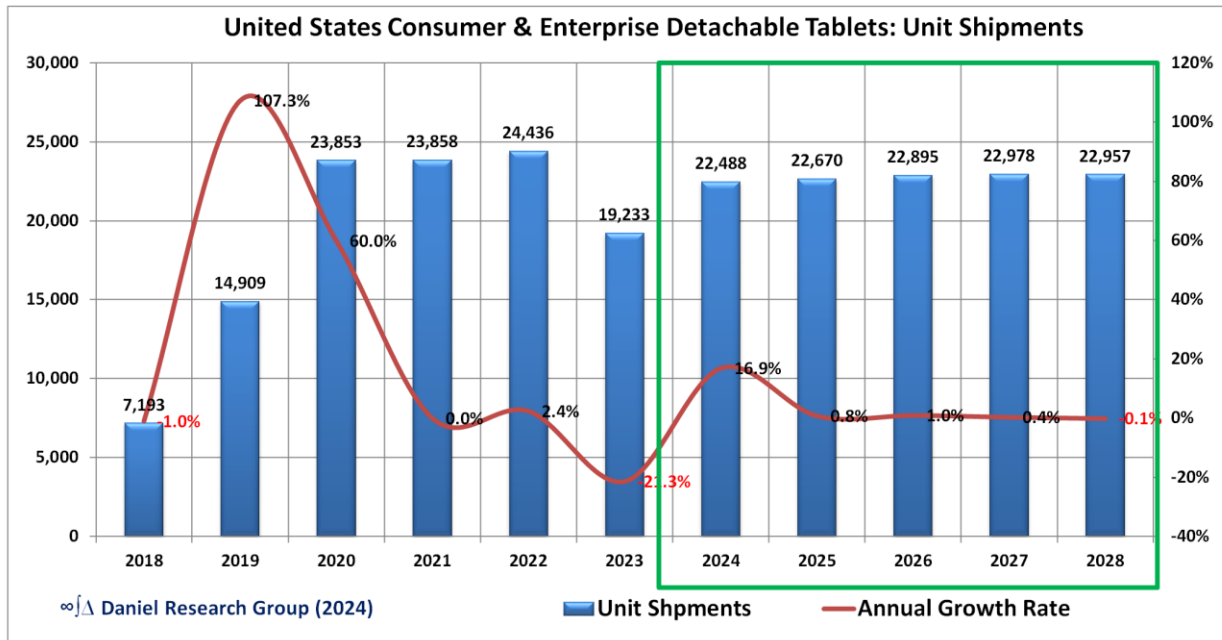
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# Total Detachable

United States Consumer & Enterprise Detachable Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	19,233	22,488	22,670	22,895	22,978	22,957	0.5%	
AGR	-21.3%	16.9%	0.8%	1.0%	0.4%	-0.1%		
Revenue (\$M)	13,162	15,403	15,747	16,131	16,424	16,648	2.0%	
AGR	-21.3%	17.0%	2.2%	2.4%	1.8%	1.4%		
Average Price (\$)	684	685	695	705	715	725	1.4%	
AGR	0.0%	0.1%	1.4%	1.4%	1.4%	1.5%		
Installed Base (K)	67,271	72,252	76,594	80,103	82,967	85,231	4.2%	
AGR	8.7%	7.4%	6.0%	4.6%	3.6%	2.7%		
Removal Age (Y)	3.10	3.23	3.52	3.79	4.00	4.22	6.9%	
AGR	17.5%	4.3%	9.0%	7.7%	5.5%	5.4%		
Average Installed Base Age (Y)	3.18	3.42	3.62	3.79	3.93	4.04	4.3%	
AGR	12.1%	7.6%	6.0%	4.6%	3.8%	2.9%		
Replacement Cycle Length (Y)	5.85	5.13	5.18	5.13	5.12	5.12	0.0%	
AGR	2.3%	-12.3%	1.0%	-0.9%	-0.1%	-0.1%		
Units per Households & Businesses (#)	2.62	2.54	2.44	2.31	2.17	2.03	-5.4%	
AGR	-2.4%	-3.1%	-4.1%	-5.2%	-5.9%	-6.4%		
Market Penetration (%)	18.4%	20.1%	22.1%	24.1%	26.3%	28.7%	10.3%	
Change '20-'25								

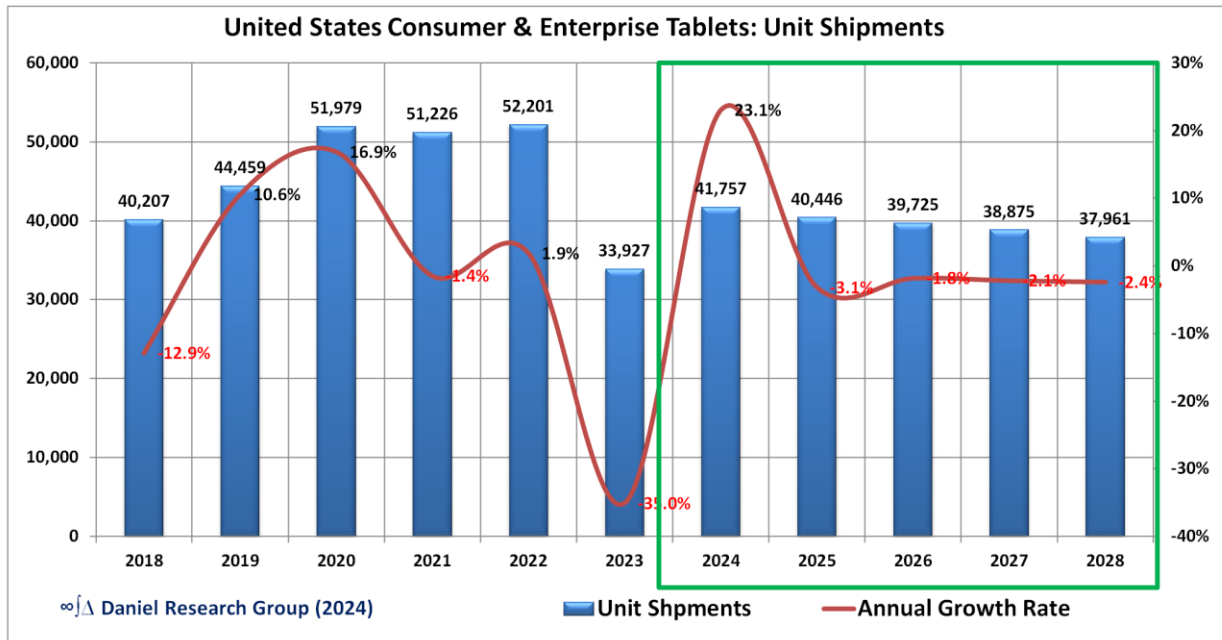
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# Total Tablets

United States Consumer & Enterprise Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	33,927	41,757	40,446	39,725	38,875	37,961	-2.4%	
AGR	-35.0%	23.1%	-3.1%	-1.8%	-2.1%	-2.4%		
Revenue (\$M)	16,372	18,871	3,160	3,102	3,041	2,983	-36.9%	
AGR	-26.1%	15.3%	-83.3%	-1.8%	-1.9%	-1.9%		
Average Price (\$)	483	452	78	78	78	79	-35.4%	
AGR	13.7%	-6.4%	-82.7%	-0.1%	0.2%	0.4%		
Installed Base (K)	197,435	191,547	185,126	178,629	172,523	166,964	-3.4%	
AGR	-5.1%	-3.0%	-3.4%	-3.5%	-3.4%	-3.2%		
Removal Age (Y)	5.30	5.26	5.45	5.54	5.54	5.51	1.2%	
AGR	12.5%	-0.7%	3.6%	1.6%	0.0%	-0.6%		
Average Installed Base Age (Y)	4.60	4.68	4.72	4.71	4.70	4.68	0.0%	
AGR	6.0%	1.8%	0.8%	-0.1%	-0.4%	-0.4%		
Replacement Cycle Length (Y)	5.43	5.02	4.95	4.86	4.84	4.84	-0.9%	
AGR	3.3%	-7.5%	-1.4%	-1.7%	-0.6%	0.0%		
Units per Households & Businesses (#)	2.10	1.99	1.88	1.77	1.67	1.69	-4.0%	
AGR	-7.6%	-5.3%	-5.6%	-5.8%	-5.7%	1.4%		
Market Penetration (%)	67.3%	68.3%	69.3%	70.3%	71.4%	67.6%	0.3%	
AGR								

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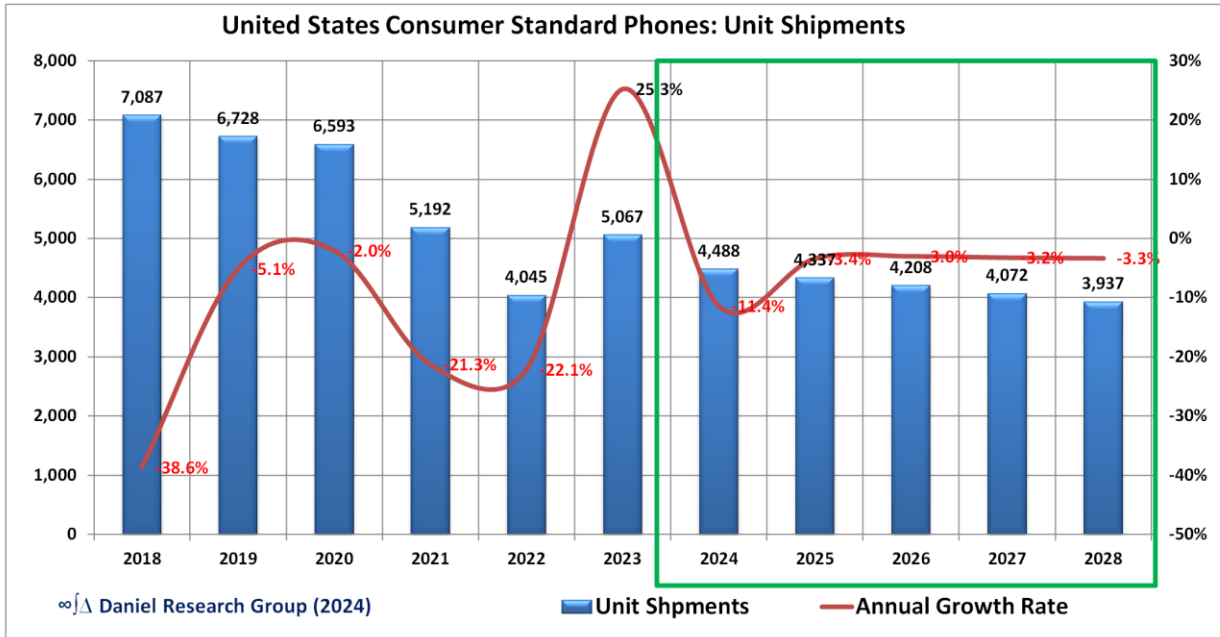


# Mobile Phones

## Consumer Standard

United States Consumer Standard Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	5,067	4,488	4,337	4,208	4,072	3,937	-3.2%	
AGR	25.3%	-11.4%	-3.4%	-3.0%	-3.2%	-3.3%		
<b>Revenue (\$M)</b>	349	316	311	308	305	301	-1.2%	
AGR	7.5%	-9.6%	-1.4%	-0.9%	-1.1%	-1.2%		
<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>	89,887	69,686	54,012	43,133	35,990	31,572	-18.0%	
AGR	-20.1%	-22.5%	-22.5%	-20.1%	-16.6%	-12.3%		
<b>Removal Age (Y)</b>	12.40	12.58	12.39	11.87	11.11	10.12	-5.3%	
AGR	-0.2%	1.5%	-1.5%	-4.2%	-6.4%	-8.9%		
<b>Average Installed Base Age (Y)</b>	9.82	9.56	9.12	8.61	8.17	7.90	-4.7%	
AGR	-0.3%	-2.6%	-4.7%	-5.5%	-5.1%	-3.3%		
<b>Replacement Cycle Length (Y)</b>	4.25	3.82	3.70	3.86	4.21	4.78	5.7%	
AGR	-7.5%	-10.1%	-3.2%	4.3%	9.1%	13.5%		
<b>Units per Households (#)</b>	5.43	5.05	4.72	4.56	4.62	4.93	-0.6%	
AGR	-4.9%	-7.0%	-6.5%	-3.4%	1.3%	6.8%		
	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%	

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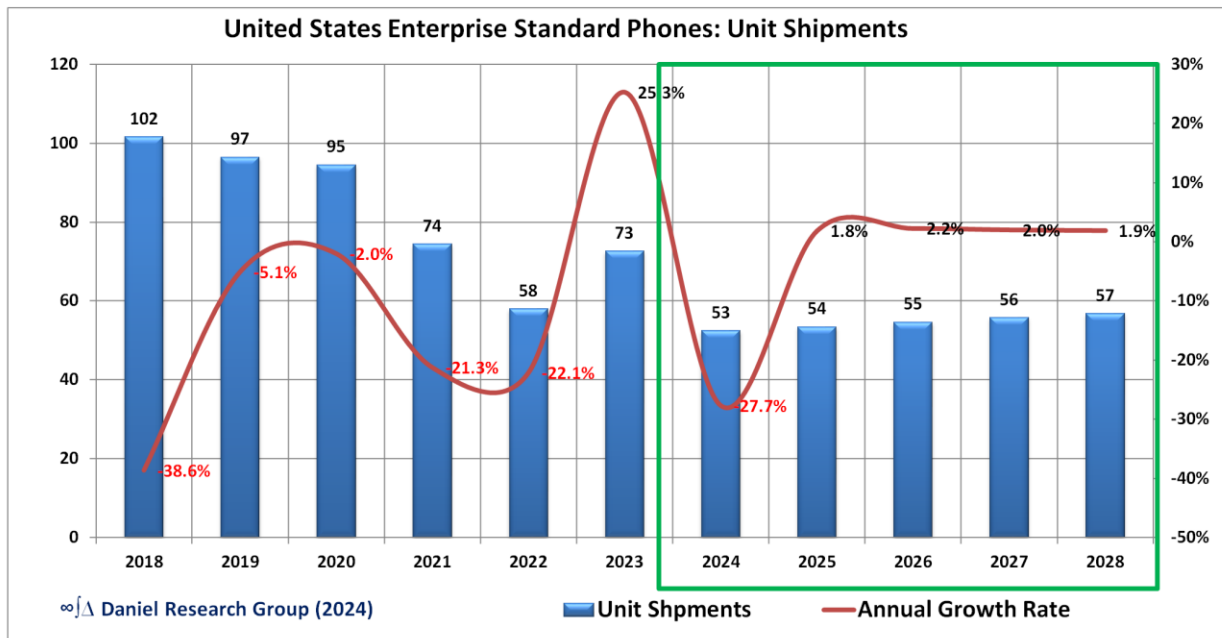




# Enterprise Standard

United States Enterprise Standard Phones									
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend	
Unit Shipments (K)	73	53	54	55	56	57	2.0%		
AGR	25.3%	-27.7%	1.8%	2.2%	2.0%	1.9%			
Revenue (\$M)	27	21	23	24	27	29	8.3%		
AGR	7.5%	-23.1%	8.2%	8.6%	8.3%	8.1%			
Average Price (\$)	373	397	421	447	475	504	6.2%		
AGR	-14.2%	6.3%	6.3%	6.2%	6.1%	6.1%			
Installed Base (K)	6,634	4,281	3,134	2,067	922	531	-40.7%		
AGR	-29.5%	-35.5%	-26.8%	-34.0%	-55.4%	-42.4%			
Removal Age (Y)	13.84	14.12	13.79	14.13	14.45	13.70	-0.8%		
AGR	1.6%	2.0%	-2.3%	2.4%	2.2%	-5.2%			
Average Installed Base Age (Y)	11.67	11.72	12.10	12.23	10.90	9.21	-5.8%		
AGR	2.3%	0.4%	3.3%	1.0%	-10.9%	-15.5%			
Replacement Cycle Length (Y)	3.33	2.78	3.61	2.84	1.77	2.19	-5.8%		
AGR	-11.4%	-16.4%	29.8%	-21.2%	-37.8%	23.6%			
Units per Businesses (#)	37.93	34.13	35.43	32.99	20.91	17.15	-15.8%		
AGR	-2.8%	-10.0%	3.8%	-6.9%	-36.6%	-18.0%			
Market Penetration (%)	2.6%	1.8%	1.3%	0.9%	0.6%	0.4%	-2.1%		

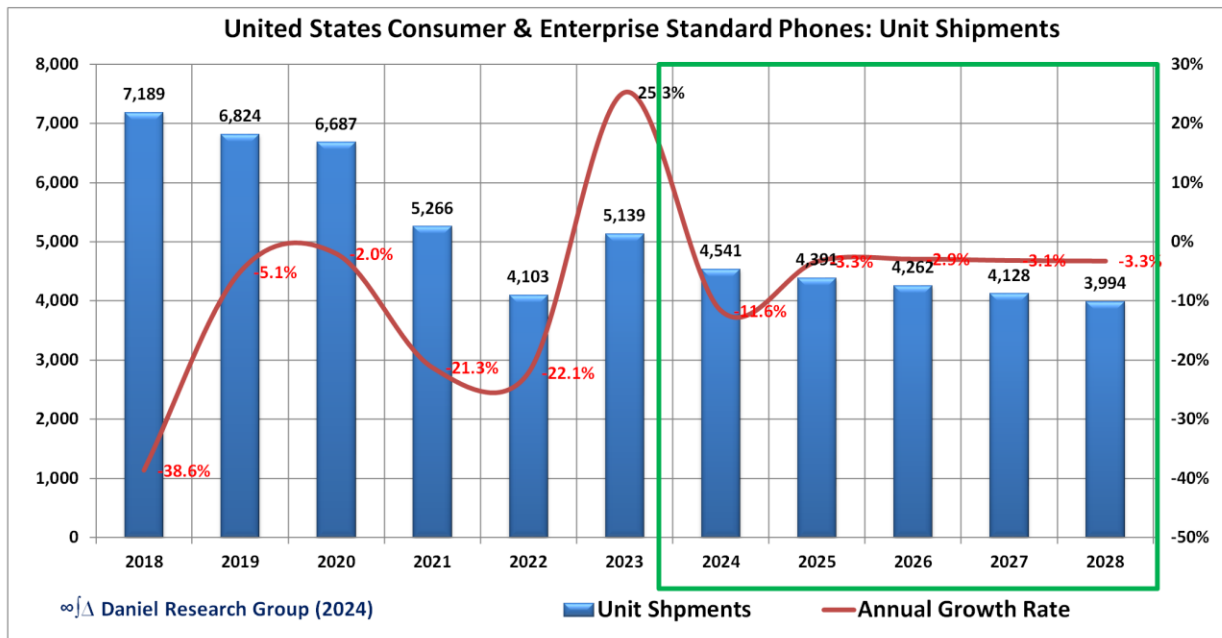
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# Total Standard

United States Consumer & Enterprise Standard Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	5,139	4,541	4,391	4,262	4,128	3,994	-3.2%	
AGR	25.3%	-11.6%	-3.3%	-2.9%	-3.1%	-3.3%		
Revenue (\$M)	376	336	334	333	331	330	-0.5%	
AGR	7.5%	-10.6%	-0.8%	-0.3%	-0.4%	-0.5%		
Average Price (\$)	73	74	76	78	80	83	2.8%	
AGR	-14.2%	1.2%	2.6%	2.7%	2.8%	2.9%		
Installed Base (K)	96,520	73,967	57,146	45,200	36,912	32,104	-18.8%	
AGR	-20.8%	-23.4%	-22.7%	-20.9%	-18.3%	-13.0%		
Removal Age (Y)	12.53	12.73	12.47	12.03	11.47	10.31	-5.1%	
AGR	0.0%	1.5%	-2.0%	-3.5%	-4.6%	-10.1%		
Average Installed Base Age (Y)	9.95	9.69	9.29	8.78	8.23	7.91	-4.9%	
AGR	-0.2%	-2.6%	-4.2%	-5.4%	-6.3%	-3.9%		
Replacement Cycle Length (Y)	4.17	3.73	3.69	3.79	3.97	4.65	5.7%	
AGR	-7.7%	-10.5%	-1.0%	2.6%	4.9%	17.0%		
Units per Households & Businesses (#)	5.77	5.31	4.95	4.74	4.71	4.99	-1.5%	
AGR	-5.6%	-7.9%	-6.7%	-4.2%	-0.7%	6.0%		
Market Penetration (%)	12.0%	9.9%	8.1%	6.6%	5.4%	4.4%	-7.6%	

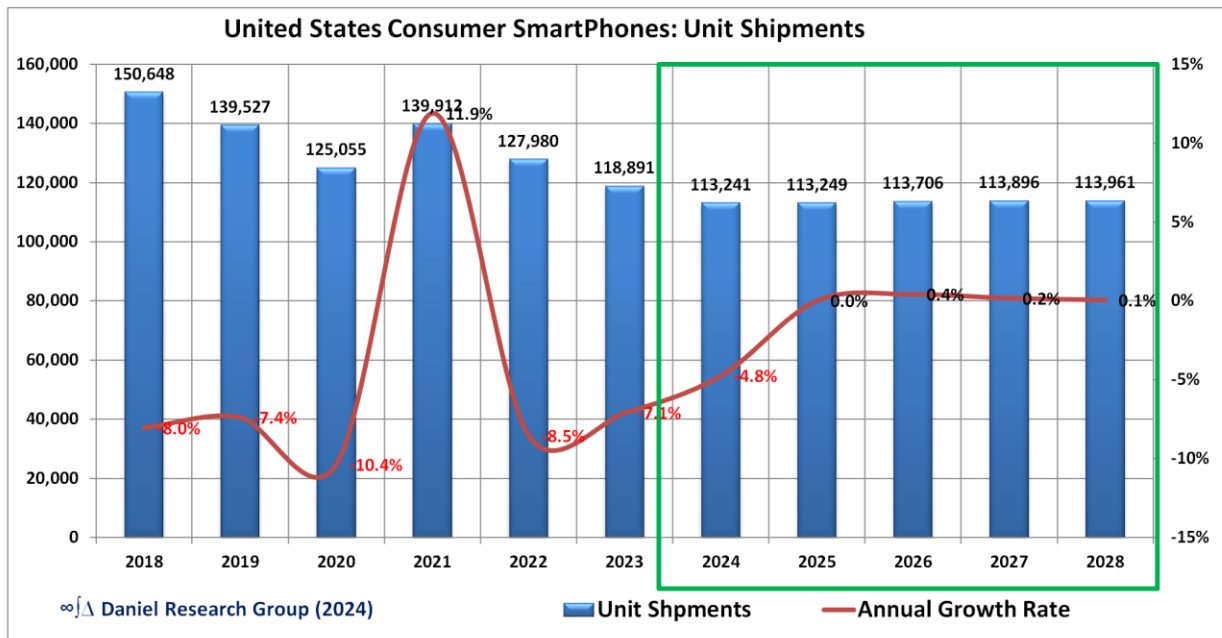
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# Consumer Smartphone

United States Consumer Smartphones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	118,891	113,241	113,249	113,706	113,896	113,961	0.2%	
AGR	-7.1%	-4.8%	0.0%	0.4%	0.2%	0.1%		
<b>Revenue (\$M)</b>	97,070	93,397	94,352	95,696	96,830	97,871	1.2%	
AGR	4.8%	-3.8%	1.0%	1.4%	1.2%	1.1%		
<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>	540,376	542,398	538,564	530,904	522,035	509,641	-1.5%	
AGR	0.8%	0.4%	-0.7%	-1.4%	-1.7%	-2.4%		
<b>Removal Age (Y)</b>	4.19	4.60	5.06	5.33	5.40	5.66	5.3%	
AGR	10.2%	9.9%	10.1%	5.3%	1.3%	4.7%		
<b>Average Installed Base Age (Y)</b>	5.56	5.81	5.96	6.06	6.13	6.12	1.3%	
AGR	5.3%	4.3%	2.7%	1.6%	1.1%	-0.1%		
<b>Replacement Cycle Length (Y)</b>	5.72	5.88	5.60	5.37	5.25	5.03	-3.8%	
AGR	3.6%	2.8%	-4.7%	-4.0%	-2.3%	-4.2%		
<b>Units per Households (#)</b>	4.31	4.23	4.12	3.99	3.86	3.72	-3.1%	
AGR	-2.2%	-2.0%	-2.6%	-3.1%	-3.1%	-3.7%		
<b>Market Penetration (%)</b>	94.2%	95.5%	96.5%	97.3%	97.9%	98.4%	4.2%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

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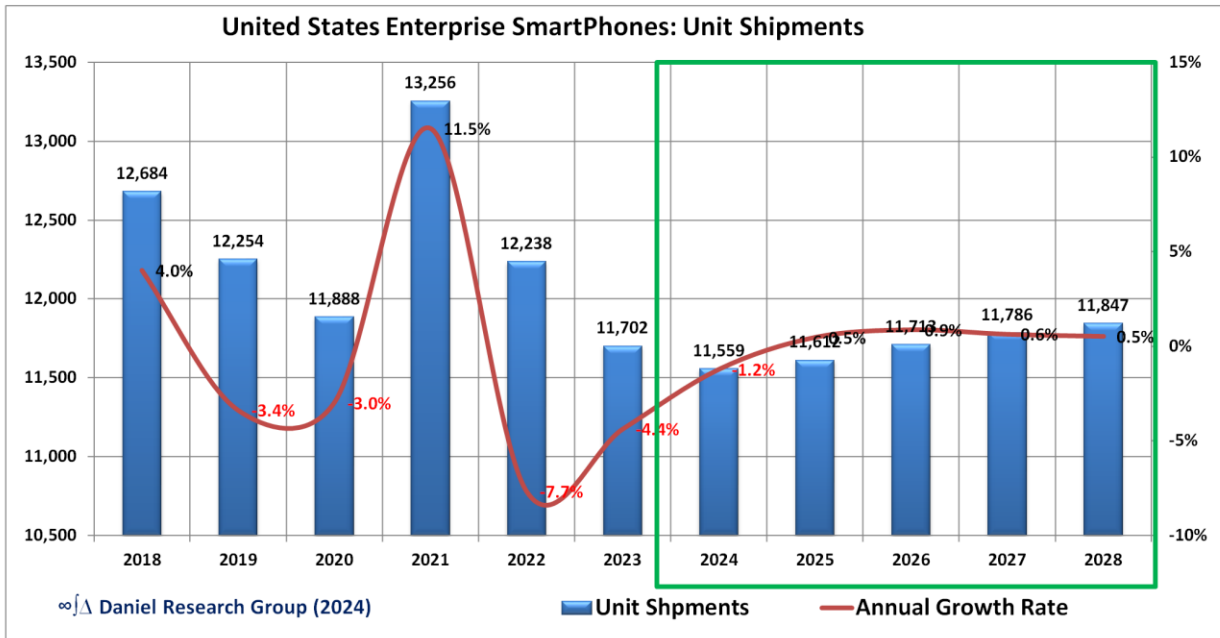
■ Unit Shpments

— 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	11,559	11,612	11,713	11,786	11,847	0.6%	
AGR	-4.4%	-1.2%	0.5%	0.9%	0.6%	0.5%		
<b>Revenue (\$M)</b>	10,750	10,886	11,212	11,594	11,961	12,325	3.2%	
AGR	5.9%	1.3%	3.0%	3.4%	3.2%	3.0%		
<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>	50,524	48,622	47,419	46,491	45,808	45,508	-1.6%	
AGR	-4.3%	-3.8%	-2.5%	-2.0%	-1.5%	-0.7%		
<b>Removal Age (Y)</b>	6.13	6.12	5.62	5.38	5.15	4.80	-5.9%	
AGR	11.1%	-0.2%	-8.1%	-4.3%	-4.3%	-6.9%		
<b>Average Installed Base Age (Y)</b>	6.11	5.93	5.83	5.75	5.71	5.73	-0.8%	
AGR	-2.2%	-2.9%	-1.7%	-1.3%	-0.8%	0.4%		
<b>Replacement Cycle Length (Y)</b>	4.62	4.61	4.70	4.68	4.67	4.75	0.7%	
AGR	-7.2%	-0.2%	1.9%	-0.5%	-0.1%	1.6%		
<b>Units per Businesses (#)</b>	51.24	57.82	67.76	79.49	94.48	113.81	18.4%	
AGR	11.1%	12.8%	17.2%	17.3%	18.9%	20.5%		
<b>Market Penetration (%)</b>	14.6%	12.2%	10.2%	8.4%	7.0%	5.7%	-8.8%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

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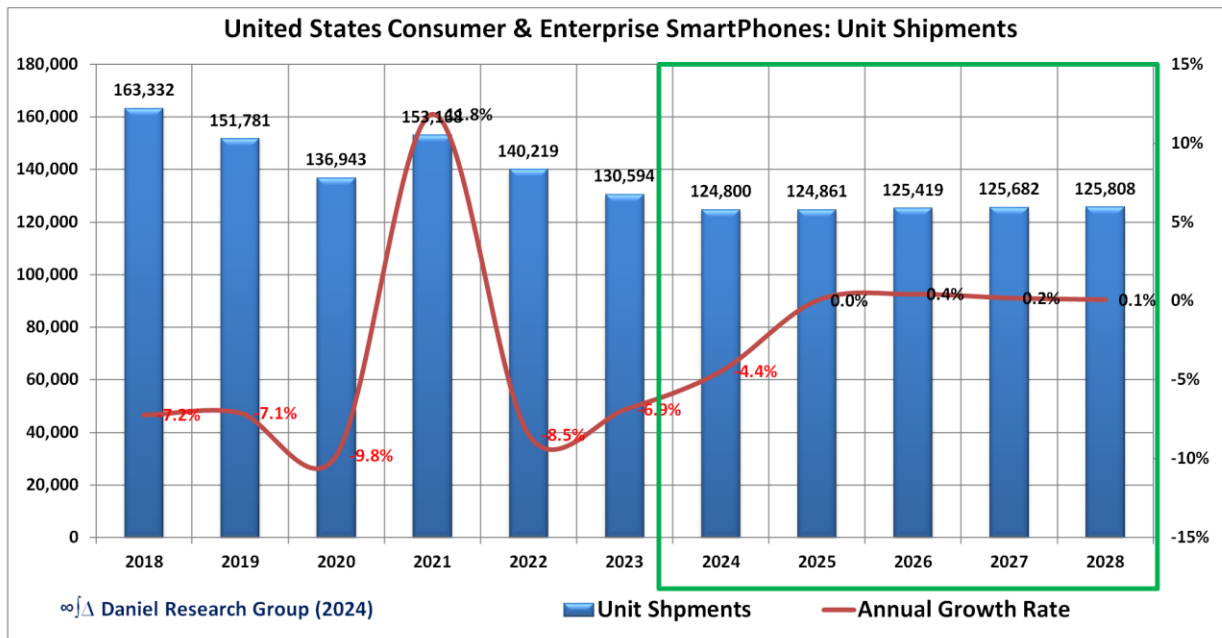
■ Unit Shpments

— Annual Growth Rate

# Total Smartphone

United States Consumer & Enterprise SmartPhones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	130,594	124,800	124,861	125,419	125,682	125,808	0.2%	
AGR	-6.9%	-4.4%	0.0%	0.4%	0.2%	0.1%		
Revenue (\$M)	107,820	104,283	105,565	107,290	108,791	110,196	1.4%	
AGR	4.9%	-3.3%	1.2%	1.6%	1.4%	1.3%		
Average Price (\$)	826	836	845	855	866	876	1.2%	
AGR	12.6%	1.2%	1.2%	1.2%	1.2%	1.2%		
Installed Base (K)	590,900	591,020	585,984	577,395	567,843	555,149	-1.6%	
AGR	0.4%	0.0%	-0.9%	-1.5%	-1.7%	-2.2%		
Removal Age (Y)	4.40	4.77	5.12	5.34	5.38	5.58	4.0%	
AGR	10.7%	8.3%	7.4%	4.2%	0.8%	3.7%		
Average Installed Base Age (Y)	5.61	5.81	5.95	6.03	6.09	6.09	1.2%	
AGR	4.5%	3.6%	2.3%	1.4%	1.0%	0.0%		
Replacement Cycle Length (Y)	5.60	5.74	5.51	5.31	5.20	5.01	-3.4%	
AGR	2.4%	2.5%	-4.0%	-3.7%	-2.1%	-3.7%		
Units per Households & Businesses (#)	4.68	4.58	4.46	4.32	4.19	4.04	-3.1%	
AGR	-2.5%	-2.2%	-2.7%	-3.1%	-3.1%	-3.5%		
Market Penetration (%)	90.4%	91.4%	92.3%	93.0%	93.5%	93.9%	Change '20-'25	Trend
							3.6%	

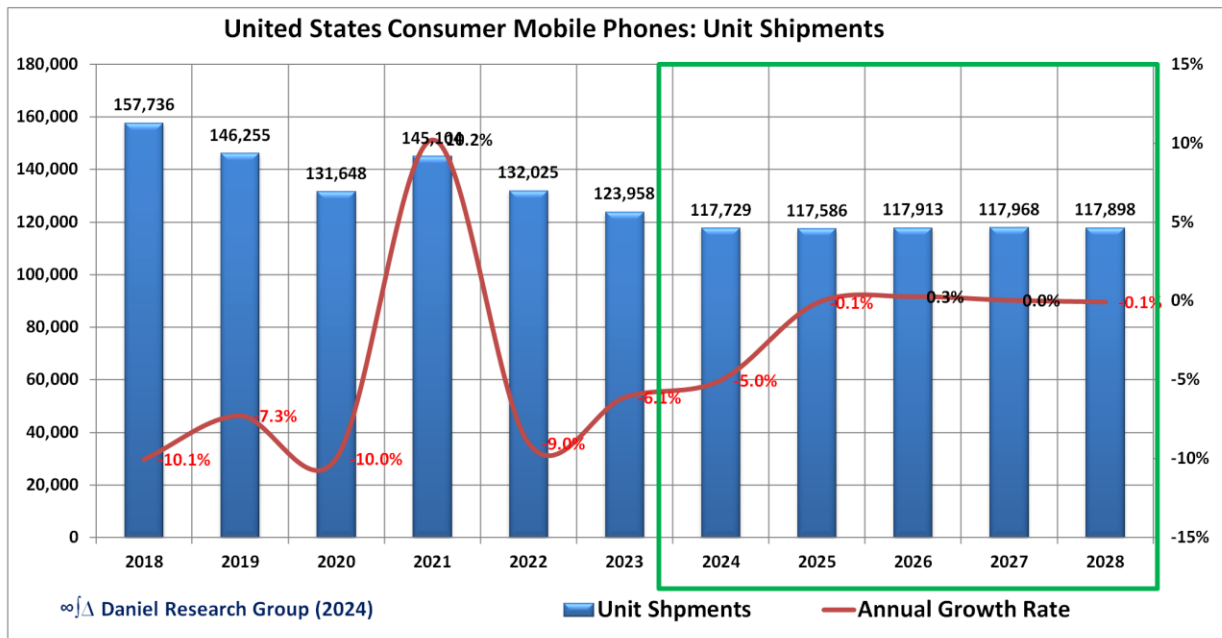
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# Consumer Total

United States Consumer Mobile Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	123,958	117,729	117,586	117,913	117,968	117,898	0.0%	
AGR	-6.1%	-5.0%	-0.1%	0.3%	0.0%	-0.1%		
<b>Revenue (\$M)</b>	97,419	93,712	94,663	96,004	97,135	98,172	1.2%	
AGR	4.8%	-3.8%	1.0%	1.4%	1.2%	1.1%		
<b>Average Price (\$)</b>	786	796	805	814	823	833	1.1%	
AGR	11.6%	1.3%	1.1%	1.1%	1.1%	1.1%		
<b>Installed Base (K)</b>	630,263	612,084	592,576	574,037	558,024	541,213	-3.0%	
AGR	-2.8%	-2.9%	-3.2%	-3.1%	-2.8%	-3.0%		
<b>Removal Age (Y)</b>	5.65	5.90	6.04	6.01	5.90	6.00	0.4%	
AGR	3.1%	4.5%	2.4%	-0.5%	-1.8%	1.7%		
<b>Average Installed Base Age (Y)</b>	6.14	6.23	6.27	6.28	6.28	6.24	0.0%	
AGR	2.1%	1.5%	0.6%	0.2%	0.1%	-0.8%		
<b>Replacement Cycle Length (Y)</b>	5.43	5.50	5.32	5.21	5.16	5.02	-2.3%	
AGR	2.0%	1.3%	-3.3%	-2.2%	-0.8%	-2.9%		
<b>Units per Households (#)</b>	4.75	4.56	4.37	4.20	4.04	3.89	-3.9%	
AGR	-4.2%	-3.9%	-4.1%	-4.0%	-3.7%	-3.9%		
<b>Market Penetration (%)</b>	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%	Change '20-'25	Trend
							0.1%	

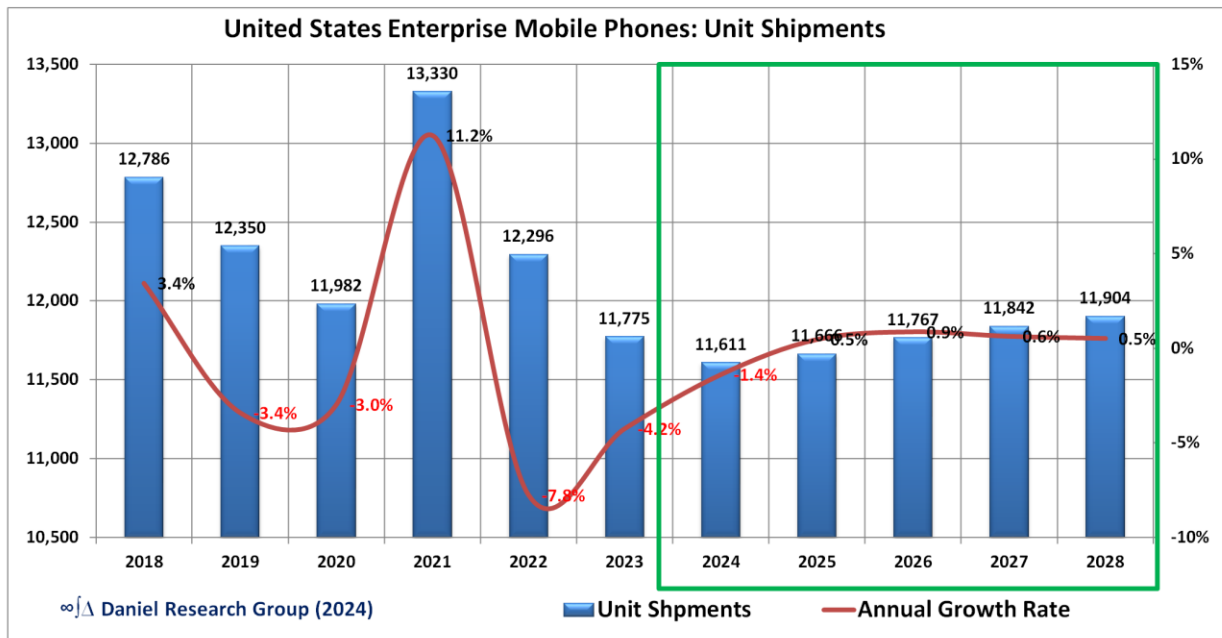
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# Enterprise Total

United States Enterprise Mobile Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	11,775	11,611	11,666	11,767	11,842	11,904	0.6%	
AGR	-4.2%	-1.4%	0.5%	0.9%	0.6%	0.5%		
<b>Revenue (\$M)</b>	10,778	10,907	11,235	11,619	11,987	12,354	3.2%	
AGR	5.9%	1.2%	3.0%	3.4%	3.2%	3.1%		
<b>Average Price (\$)</b>	915	939	963	987	1,012	1,038	2.5%	
AGR	10.6%	2.6%	2.5%	2.5%	2.5%	2.5%		
<b>Installed Base (K)</b>	57,158	52,903	50,553	48,558	46,730	46,040	-3.4%	
AGR	-8.1%	-7.4%	-4.4%	-3.9%	-3.8%	-1.5%		
<b>Removal Age (Y)</b>	7.37	7.25	6.35	6.05	5.87	5.11	-8.4%	
AGR	4.0%	-1.6%	-12.4%	-4.7%	-3.0%	-12.9%		
<b>Average Installed Base Age (Y)</b>	6.73	6.39	6.21	6.03	5.84	5.80	-2.4%	
AGR	-3.7%	-5.0%	-2.9%	-2.9%	-3.2%	-0.6%		
<b>Replacement Cycle Length (Y)</b>	4.40	4.33	4.61	4.53	4.42	4.66	1.8%	
AGR	-6.9%	-1.5%	6.3%	-1.7%	-2.4%	5.4%		
<b>Units per Businesses (#)</b>	53.25	63.93	81.31	104.21	135.32	181.22	29.8%	
AGR	16.7%	20.0%	27.2%	28.2%	29.9%	33.9%		
<b>Market Penetration (%)</b>	15.9%	12.0%	9.0%	6.7%	5.0%	3.6%	-12.2%	

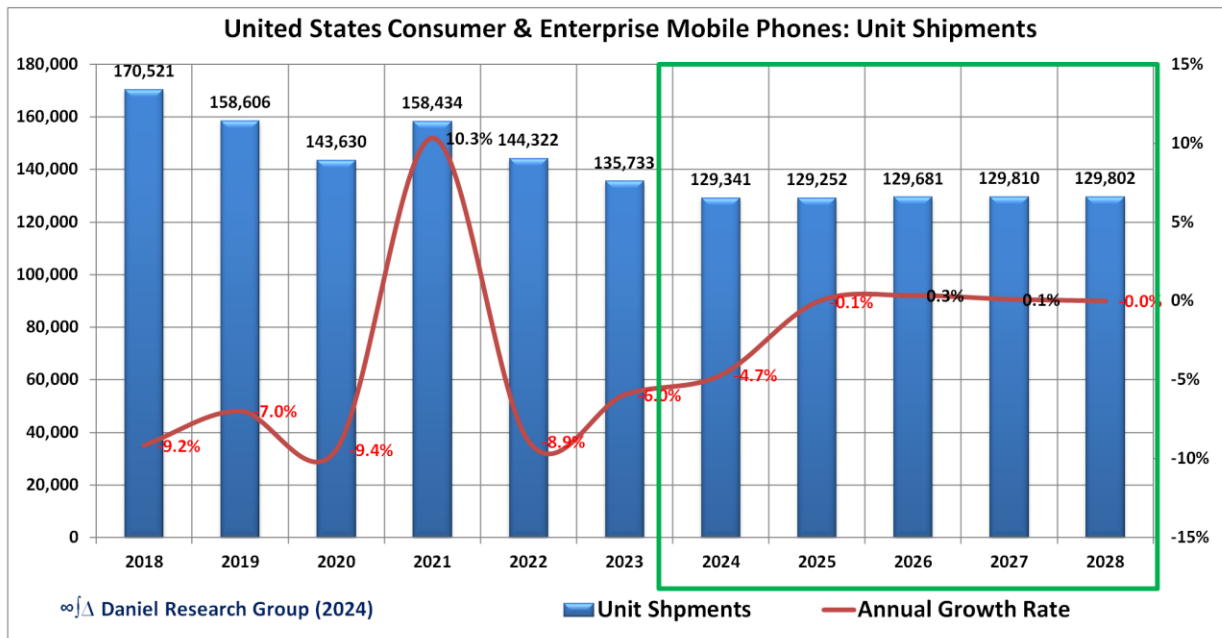
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# Total Mobile Phones

United States Consumer & Enterprise Mobile Phones								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	135,733	129,341	129,252	129,681	129,810	129,802	0.1%	
AGR	-6.0%	-4.7%	-0.1%	0.3%	0.1%	0.0%		
Revenue (\$M)	108,197	104,619	105,898	107,623	109,122	110,525	1.4%	
AGR	4.9%	-3.3%	1.2%	1.6%	1.4%	1.3%		
Average Price (\$)	797	809	819	830	841	851	1.3%	
AGR	11.5%	1.5%	1.3%	1.3%	1.3%	1.3%		
Installed Base (K)	687,420	664,987	643,129	622,595	604,755	587,253	-3.1%	
AGR	-3.3%	-3.3%	-3.3%	-3.2%	-2.9%	-2.9%		
Removal Age (Y)	5.84	6.05	6.07	6.02	5.90	5.92	-0.5%	
AGR	3.4%	3.6%	0.4%	-0.9%	-1.9%	0.3%		
Average Installed Base Age (Y)	6.19	6.24	6.26	6.26	6.25	6.20	-0.2%	
AGR	1.4%	0.9%	0.3%	-0.1%	-0.2%	-0.8%		
Replacement Cycle Length (Y)	5.32	5.38	5.26	5.14	5.10	4.99	-1.9%	
AGR	1.1%	1.1%	-2.3%	-2.1%	-0.9%	-2.1%		
Units per Households & Businesses (#)	4.92	4.71	4.52	4.33	4.17	4.02	-3.9%	
AGR	-4.6%	-4.3%	-4.1%	-4.1%	-3.7%	-3.7%		
Market Penetration (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	

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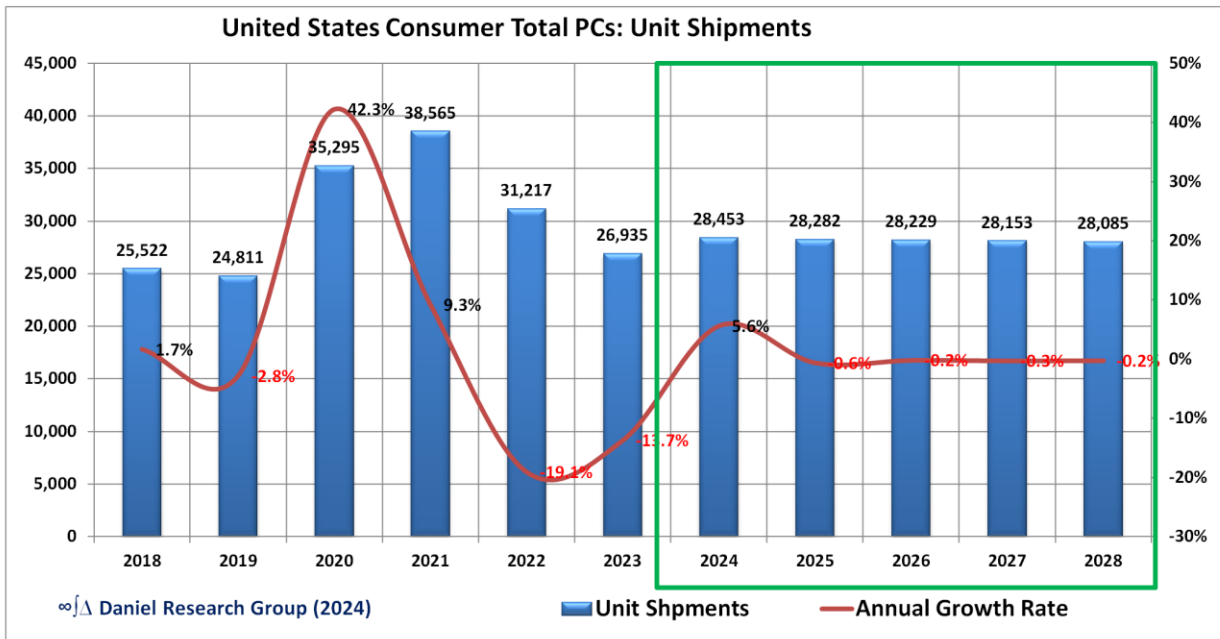
# Market Aggregations

## Total PCs (Desktop and Mobile)

### Consumer PCs

United States Consumer Total PCs									
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend	
<b>Unit Shipments (K)</b>	26,935	28,453	28,282	28,229	28,153	28,085	-0.3%		
AGR	-13.7%	5.6%	-0.6%	-0.2%	-0.3%	-0.2%			
<b>Revenue (\$M)</b>	30,794	33,460	35,271	37,399	39,693	42,211	6.0%		
AGR	-15.4%	8.7%	5.4%	6.0%	6.1%	6.3%			
<b>Average Price (\$)</b>	1,143	1,176	1,247	1,325	1,410	1,503	6.3%		
AGR	-1.9%	2.9%	6.0%	6.2%	6.4%	6.6%			
<b>Installed Base (K)</b>	118,590	116,646	114,791	113,081	111,623	110,489	-1.3%		
AGR	-1.2%	-1.6%	-1.6%	-1.5%	-1.3%	-1.0%			
<b>Removal Age (Y)</b>	4.63	4.64	4.75	4.83	4.90	4.96	1.6%		
AGR	6.4%	0.3%	2.2%	1.8%	1.4%	1.1%			
<b>Average Installed Base Age (Y)</b>	4.15	4.27	4.35	4.41	4.43	4.43	0.9%		
AGR	4.5%	2.9%	2.0%	1.2%	0.5%	0.0%			
<b>Replacement Cycle Length (Y)</b>	5.17	4.84	4.81	4.78	4.77	4.78	-0.3%		
AGR	2.5%	-6.5%	-0.6%	-0.7%	-0.2%	0.2%			
<b>Units per Households (#)</b>	1.14	1.08	1.02	1.00	1.00	1.00	-1.8%		
AGR	-5.6%	-5.4%	-4.9%	-2.3%					
<b>Market Penetration (%)</b>	78.4%	80.6%	82.7%	82.7%	80.9%	79.4%	1.0%		
AGR									

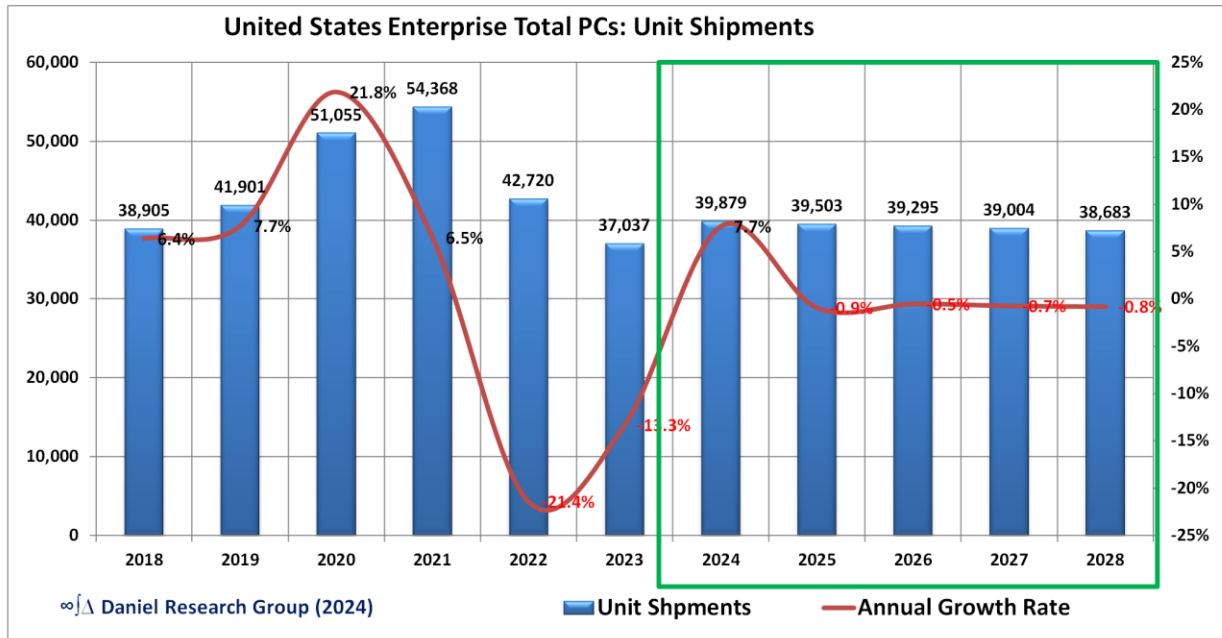
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# Enterprise PCs

United States Enterprise Total PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	37,037	39,879	39,503	39,295	39,004	38,683	-0.8%	
AGR	-13.3%	7.7%	-0.9%	-0.5%	-0.7%	-0.8%		
Revenue (\$M)	25,456	29,097	29,248	29,516	29,717	29,886	0.7%	
AGR	-19.9%	14.3%	0.5%	0.9%	0.7%	0.6%		
Average Price (\$)	687	730	740	751	762	773	1.4%	
AGR	-7.7%	6.2%	1.5%	1.5%	1.4%	1.4%		
Installed Base (K)	135,776	139,664	142,543	144,561	145,788	146,287	1.2%	
AGR	2.2%	2.9%	2.1%	1.4%	0.8%	0.3%		
Removal Age (Y)	4.45	4.42	4.47	4.52	4.57	4.64	1.2%	
AGR	11.3%	-0.7%	1.3%	1.0%	1.2%	1.4%		
Average Installed Base Age (Y)	4.07	4.08	4.10	4.14	4.18	4.21	0.8%	
AGR	1.2%	0.2%	0.6%	0.9%	1.0%	0.9%		
Replacement Cycle Length (Y)	4.99	4.88	4.89	4.88	4.86	4.83	-0.3%	
AGR	30.8%	-2.1%	0.2%	-0.3%	-0.4%	-0.6%		
Units per Businesses (#)	20.08	20.31	20.68	20.80	20.90	20.95	0.8%	
AGR	-0.2%	1.1%	1.8%	0.6%	0.5%	0.2%		
Market Penetration (%)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Change '20-'25	Trend
							0.0%	

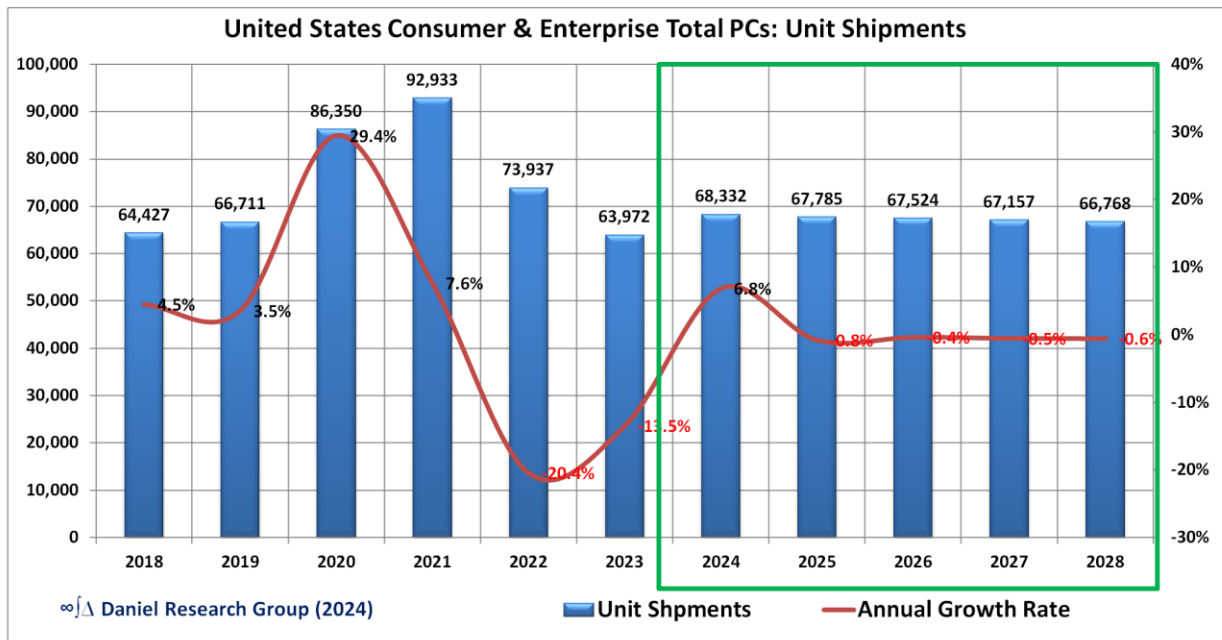
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# Total PCs

United States Consumer & Enterprise Total PCs								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	63,972	68,332	67,785	67,524	67,157	66,768	-0.6%	
AGR	-13.5%	6.8%	-0.8%	-0.4%	-0.5%	-0.6%		
Revenue (\$M)	56,249	62,557	64,519	66,915	69,410	72,097	3.6%	
AGR	-17.5%	11.2%	3.1%	3.7%	3.7%	3.9%		
Average Price (\$)	879	915	952	991	1,034	1,080	4.2%	
AGR	-4.7%	4.1%	4.0%	4.1%	4.3%	4.5%		
Installed Base (K)	254,366	256,311	257,334	257,642	257,411	256,776	0.0%	
AGR	0.6%	0.8%	0.4%	0.1%	-0.1%	-0.2%		
Removal Age (Y)	4.52	4.51	4.59	4.65	4.71	4.77	1.4%	
AGR	9.2%	-0.3%	1.7%	1.4%	1.3%	1.3%		
Average Installed Base Age (Y)	4.10	4.16	4.21	4.25	4.29	4.31	0.9%	
AGR	2.8%	1.5%	1.3%	1.0%	0.8%	0.5%		
Replacement Cycle Length (Y)	5.07	4.86	4.85	4.83	4.82	4.81	-0.3%	
AGR	18.2%	-4.1%	-0.1%	-0.4%	-0.3%	-0.2%		
Units per Households & Businesses (#)	2.29	2.23	2.16	2.15	2.17	2.19	-0.4%	
AGR	-3.7%	-2.9%	-2.8%	-0.7%	1.1%	0.7%		
Market Penetration (%)	79.4%	81.6%	83.6%	83.5%	81.8%	80.4%	0.9%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

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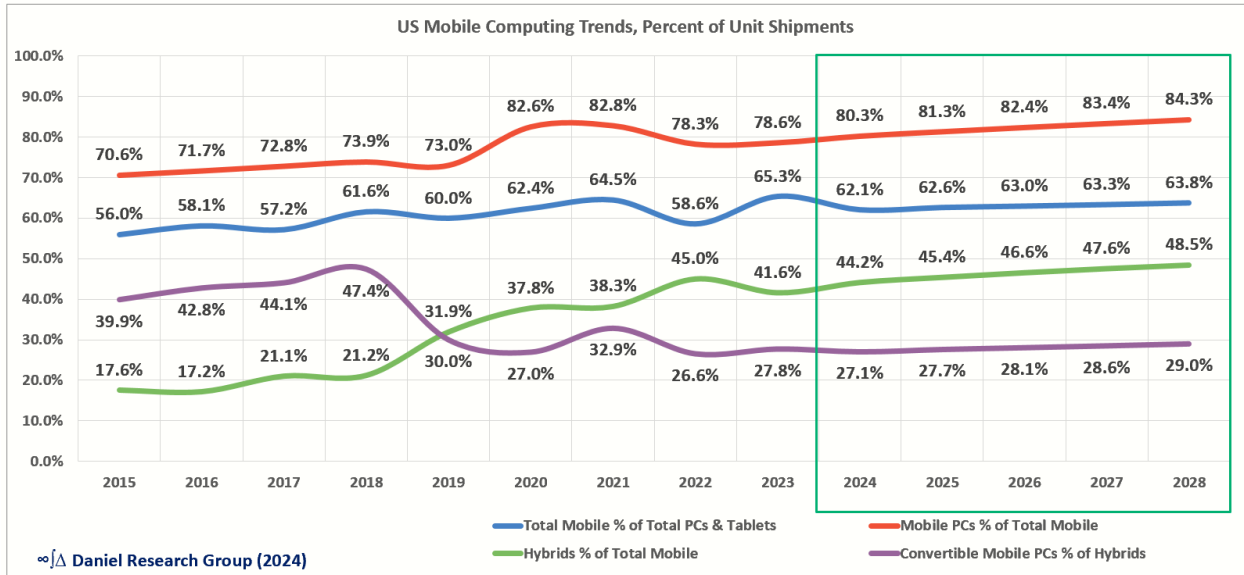
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■ Unit Shpments

— Annual Growth Rate

# Mobile PCs and Tablets

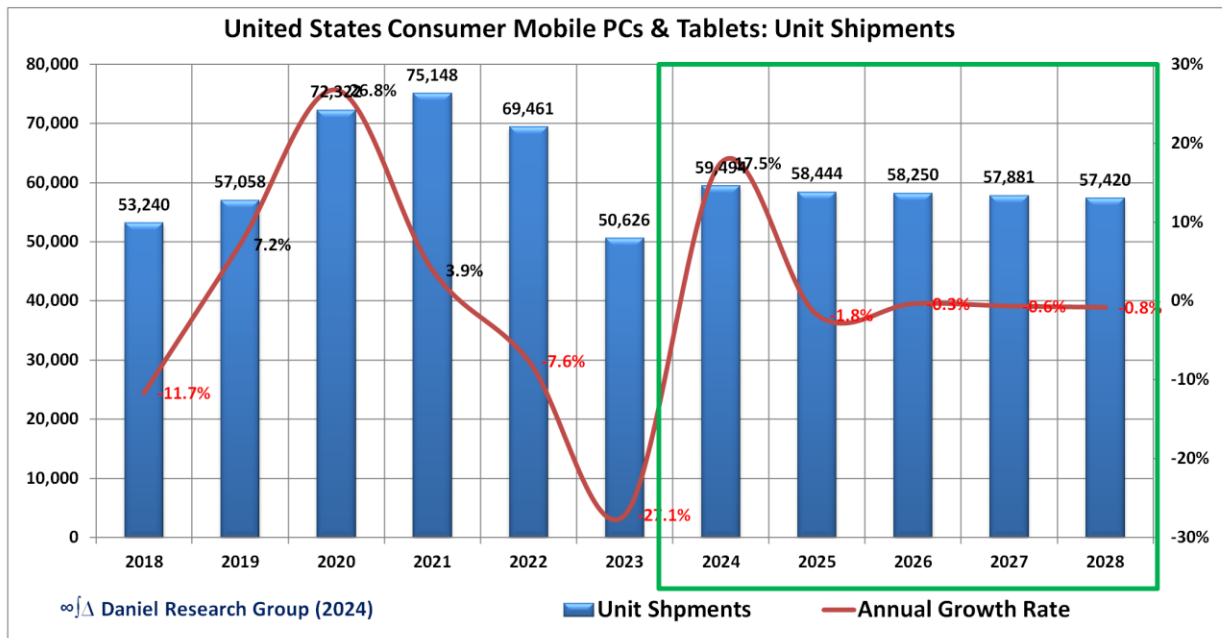
## Mobile Trends



# Consumer

United States Consumer Mobile PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	50,626	59,494	58,444	58,250	57,881	57,420	-0.9%	
AGR	-27.1%	17.5%	-1.8%	-0.3%	-0.6%	-0.8%		
Revenue (\$M)	37,217	41,871	28,427	30,956	33,643	36,534	-3.4%	
AGR	-18.9%	12.5%	-32.1%	8.9%	8.7%	8.6%		
Average Price (\$)	735	704	486	531	581	636	-2.5%	
AGR	11.3%	-4.3%	-30.9%	9.3%	9.4%	9.5%		
Installed Base (K)	276,228	270,187	263,352	256,748	250,877	245,841	-2.3%	
AGR	-3.7%	-2.2%	-2.5%	-2.5%	-2.3%	-2.0%		
Removal Age (Y)	5.16	5.15	5.31	5.39	5.40	5.39	1.2%	
AGR	9.9%	-0.2%	3.1%	1.5%	0.2%	-0.2%		
Average Installed Base Age (Y)	4.48	4.57	4.62	4.63	4.62	4.60	0.1%	
AGR	5.7%	2.1%	1.1%	0.2%	-0.2%	-0.5%		
Replacement Cycle Length (Y)	5.52	5.12	5.03	4.96	4.94	4.94	-0.9%	
AGR	0.7%	-7.1%	-1.7%	-1.5%	-0.5%	0.0%		
Units per Households (#)	2.10	2.03	1.95	1.89	1.82	1.77	-3.4%	
AGR	-5.4%	-3.5%	-3.6%	-3.6%	-3.3%	-2.9%		
Market Penetration (%)	98.8%	99.2%	99.4%	99.6%	99.7%	99.8%	0.9%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

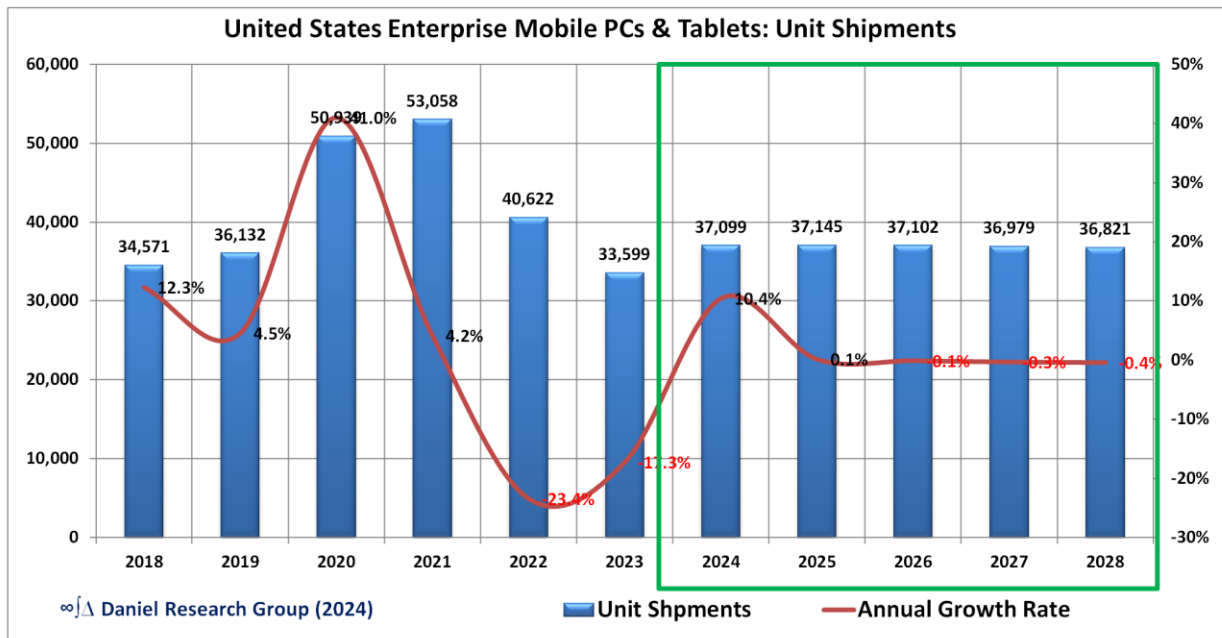
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# Enterprise

United States Enterprise Mobile PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	33,599	37,099	37,145	37,102	36,979	36,821	-0.2%	
AGR	-17.3%	10.4%	0.1%	-0.1%	-0.3%	-0.4%		
<b>Revenue (\$M)</b>	22,187	26,169	26,436	26,740	26,985	27,206	1.0%	
AGR	-21.8%	17.9%	1.0%	1.1%	0.9%	0.8%		
<b>Average Price (\$)</b>	660	705	712	721	730	739	1.2%	
AGR	-5.4%	6.8%	0.9%	1.3%	1.3%	1.2%		
<b>Installed Base (K)</b>	129,760	134,751	138,824	141,678	143,478	144,443	1.8%	
AGR	3.5%	3.8%	3.0%	2.1%	1.3%	0.7%		
<b>Removal Age (Y)</b>	4.41	4.39	4.49	4.58	4.66	4.73	1.9%	
AGR	15.9%	-0.3%	2.3%	1.8%	1.9%	1.6%		
<b>Average Installed Base Age (Y)</b>	4.00	4.05	4.10	4.15	4.20	4.24	1.2%	
AGR	2.6%	1.1%	1.2%	1.3%	1.2%	1.1%		
<b>Replacement Cycle Length (Y)</b>	5.44	5.20	5.20	5.14	5.08	5.03	-0.8%	
AGR	40.2%	-4.4%	0.0%	-1.2%	-1.1%	-1.0%		
<b>Units per Businesses (#)</b>	19.20	19.59	20.14	20.39	20.57	20.69	1.4%	
AGR	1.0%	2.1%	2.8%	1.2%	0.9%	0.6%		
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Change '20-'25	Trend
							0.0%	

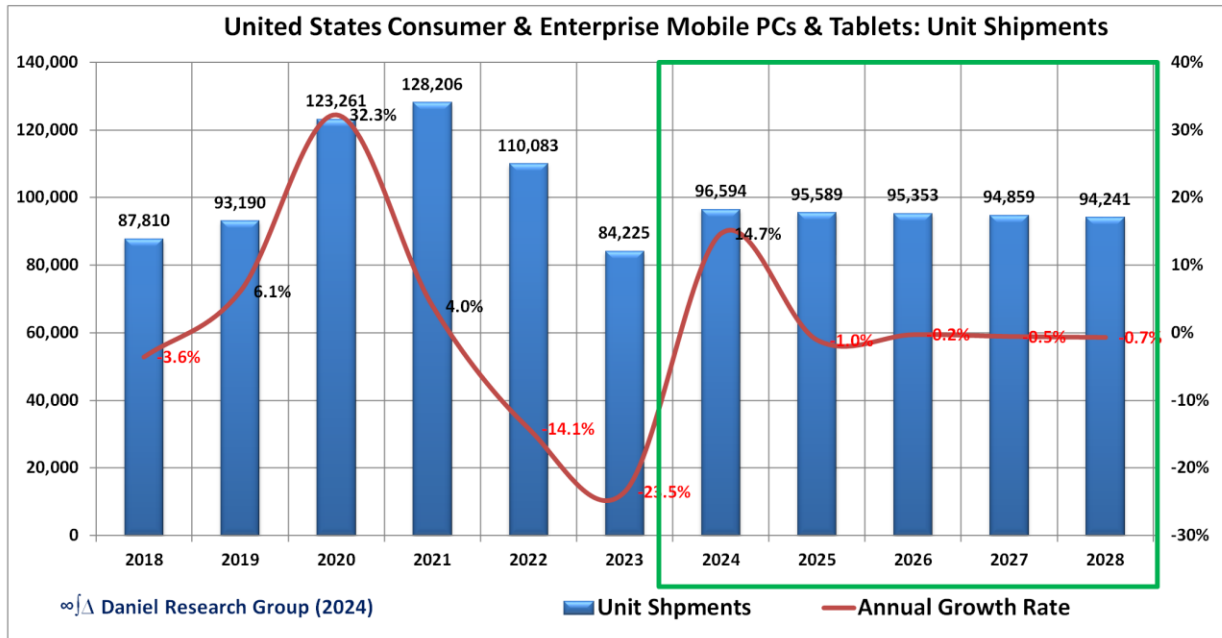
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# Total Mobile PCs and Tablets

United States Consumer & Enterprise Mobile PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	84,225	96,594	95,589	95,353	94,859	94,241	-0.6%	
AGR	-23.5%	14.7%	-1.0%	-0.2%	-0.5%	-0.7%		
Revenue (\$M)	59,404	68,040	54,864	57,696	60,628	63,740	-1.6%	
AGR	-20.0%	14.5%	-19.4%	5.2%	5.1%	5.1%		
Average Price (\$)	705	704	574	605	639	676	-1.0%	
AGR	4.6%	-0.1%	-18.5%	5.4%	5.6%	5.8%		
Installed Base (K)	405,987	404,937	402,175	398,427	394,355	390,284	-0.9%	
AGR	-1.5%	-0.3%	-0.7%	-0.9%	-1.0%	-1.0%		
Removal Age (Y)	4.88	4.87	5.00	5.08	5.12	5.15	1.4%	
AGR	12.1%	-0.2%	2.8%	1.6%	0.8%	0.4%		
Average Installed Base Age (Y)	4.30	4.38	4.43	4.46	4.47	4.47	0.5%	
AGR	4.9%	1.8%	1.2%	0.6%	0.3%	0.1%		
Replacement Cycle Length (Y)	5.49	5.15	5.09	5.02	4.99	4.97	-0.9%	
AGR	13.7%	-6.3%	-1.1%	-1.4%	-0.7%	-0.3%		
Units per Households & Businesses (#)	2.94	2.89	2.84	2.78	2.73	2.68	-1.9%	
AGR	-3.3%	-1.6%	-1.8%	-2.0%	-2.0%	-1.9%		
Market Penetration (%)	98.9%	99.2%	99.4%	99.6%	99.7%	99.8%	0.9%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

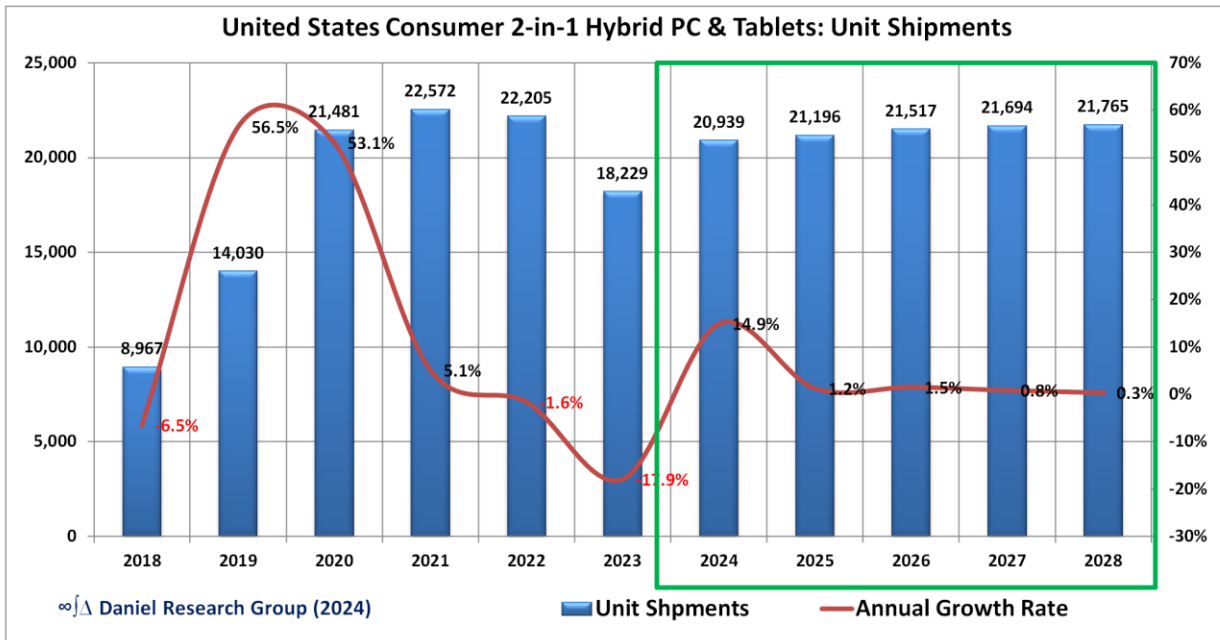
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# Hybrids, 2-in-1, Convertible Model PCs, and Detachable Tablets Consumer

United States Consumer 2-in-1 Hybrid PC & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	18,229	20,939	21,196	21,517	21,694	21,765	1.0%	
AGR	-17.9%	14.9%	1.2%	1.5%	0.8%	0.3%		
<b>Revenue (\$M)</b>	12,335	14,735	15,120	15,569	15,925	16,212	2.4%	
AGR	-21.1%	19.5%	2.6%	3.0%	2.3%	1.8%		
<b>Average Price (\$)</b>	677	704	713	724	734	745	1.4%	
AGR	-3.8%	4.0%	1.4%	1.4%	1.5%	1.5%		
<b>Installed Base (K)</b>	68,480	72,217	75,311	77,866	80,035	81,827	3.2%	
AGR	6.2%	5.5%	4.3%	3.4%	2.8%	2.2%		
<b>Removal Age (Y)</b>	3.37	3.51	3.77	4.01	4.19	4.37	5.7%	
AGR	12.0%	4.0%	7.5%	6.5%	4.4%	4.4%		
<b>Average Installed Base Age (Y)</b>	3.37	3.59	3.78	3.92	4.04	4.13	3.5%	
AGR	10.9%	6.8%	5.2%	3.8%	2.9%	2.2%		
<b>Replacement Cycle Length (Y)</b>	5.81	5.20	5.16	5.11	5.10	5.10	-0.5%	
AGR	-10.2%	-10.5%	-0.7%	-1.0%	-0.1%	0.0%		
<b>Units per Households (#)</b>	2.27	2.21	2.14	2.05	1.96	1.86	-4.2%	
AGR	-1.6%	-2.6%	-3.2%	-4.0%	-4.5%	-4.9%		
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend
<b>Market Penetration (%)</b>	22.7%	24.3%	26.0%	27.7%	29.6%	31.5%	8.8%	

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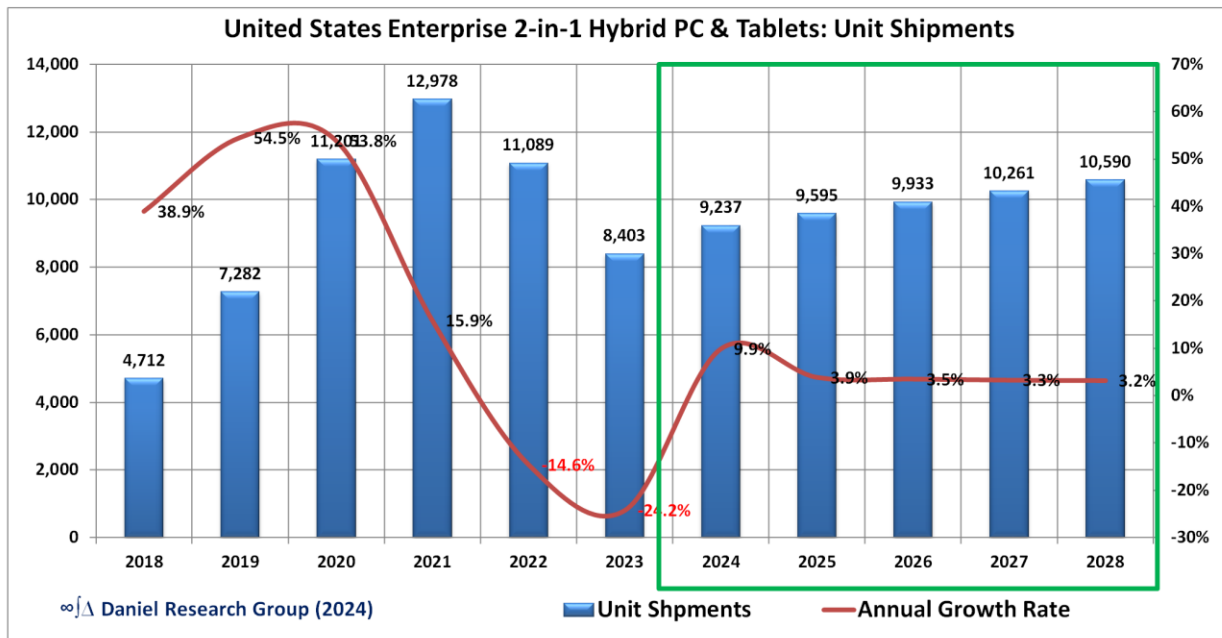




# Enterprise

United States Enterprise 2-in-1 Hybrid PC & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	8,403	9,237	9,595	9,933	10,261	10,590	3.5%	
AGR	-24.2%	9.9%	3.9%	3.5%	3.3%	3.2%		
Revenue (\$M)	5,389	5,925	6,059	6,172	6,266	6,349	1.7%	
AGR	-27.5%	9.9%	2.3%	1.9%	1.5%	1.3%		
Average Price (\$)	641	641	632	621	611	600	-1.7%	
AGR	-4.3%	0.0%	-1.5%	-1.6%	-1.7%	-1.8%		
Installed Base (K)	23,829	25,629	27,422	28,937	30,231	31,359	5.2%	
AGR	9.2%	7.6%	7.0%	5.5%	4.5%	3.7%		
Removal Age (Y)	2.67	2.88	3.12	3.32	3.48	3.61	5.9%	
AGR	25.2%	7.7%	8.7%	6.2%	5.0%	3.7%		
Average Installed Base Age (Y)	3.03	3.27	3.45	3.60	3.71	3.79	3.7%	
AGR	12.0%	8.0%	5.5%	4.2%	3.0%	2.1%		
Replacement Cycle Length (Y)	4.73	4.45	4.51	4.44	4.37	4.31	-0.8%	
AGR	31.7%	-6.0%	1.5%	-1.7%	-1.5%	-1.3%		
Units per Businesses (#)	3.69	3.80	4.01	4.18	4.34	4.49	4.3%	
AGR	0.1%	3.0%	5.6%	4.2%	3.9%	3.5%		
Market Penetration (%)	95.6%	98.2%	99.3%	99.7%	99.9%	100.0%	4.3%	
							Change '20-'25	
							4.3%	

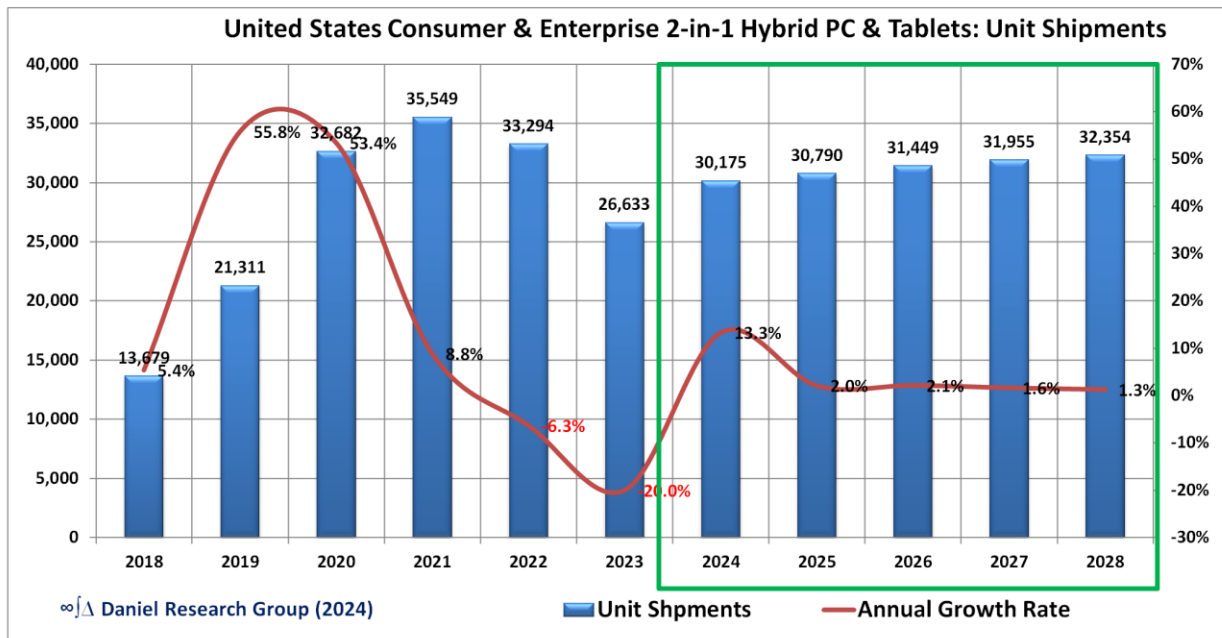
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# Total Hybrids

United States Consumer & Enterprise 2-in-1 Hybrid PC & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	26,633	30,175	30,790	31,449	31,955	32,354	1.8%	
AGR	-20.0%	13.3%	2.0%	2.1%	1.6%	1.3%		
Revenue (\$M)	17,724	20,659	21,179	21,741	22,191	22,561	2.2%	
AGR	-23.1%	16.6%	2.5%	2.7%	2.1%	1.7%		
Average Price (\$)	666	685	688	691	694	697	0.5%	
AGR	-3.9%	2.9%	0.5%	0.5%	0.5%	0.4%		
Installed Base (K)	92,309	97,846	102,733	106,803	110,267	113,186	3.7%	
AGR	6.9%	6.0%	5.0%	4.0%	3.2%	2.6%		
Removal Age (Y)	3.14	3.30	3.56	3.79	3.97	4.13	5.8%	
AGR	17.1%	5.2%	7.9%	6.4%	4.7%	4.2%		
Average Installed Base Age (Y)	3.25	3.49	3.68	3.82	3.94	4.02	3.6%	
AGR	11.4%	7.3%	5.4%	3.9%	3.0%	2.1%		
Replacement Cycle Length (Y)	5.47	4.97	4.97	4.90	4.87	4.85	-0.6%	
AGR	3.9%	-9.2%	-0.1%	-1.3%	-0.6%	-0.5%		
Units per Households & Businesses (#)	2.52	2.48	2.44	2.38	2.31	2.22	-2.7%	
AGR	-1.1%	-1.5%	-1.6%	-2.5%	-3.1%	-3.6%		
Market Penetration (%)	26.2%	27.9%	29.5%	31.2%	33.0%	34.8%	8.6%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

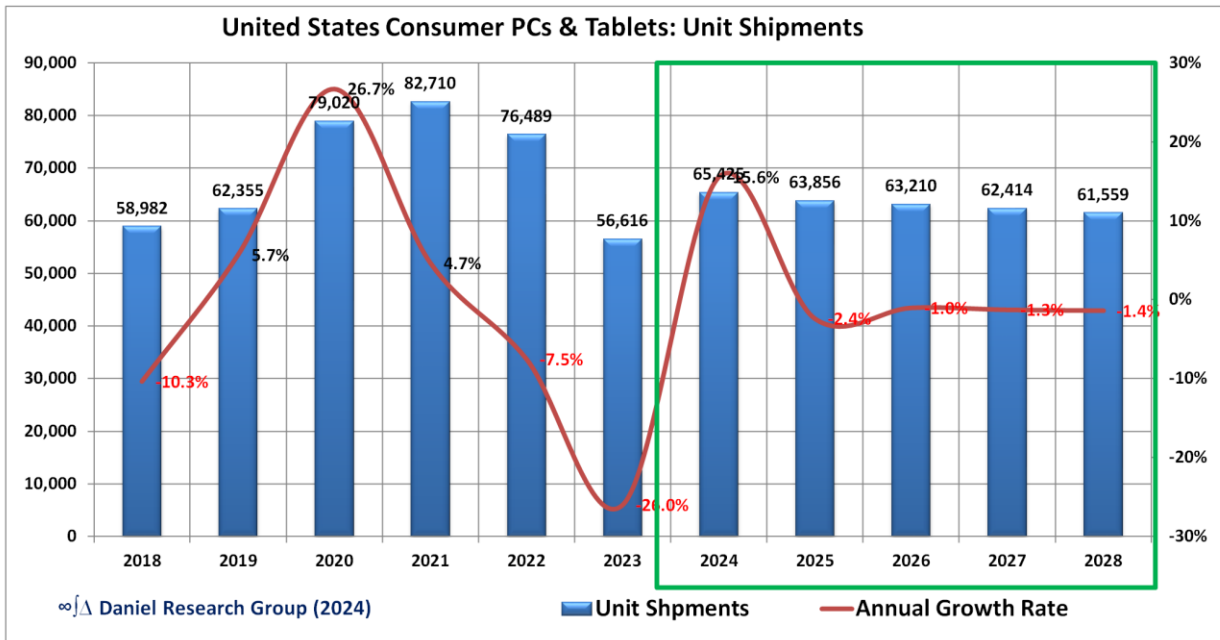
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# Total PCs and Tablets Consumer

United States Consumer PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	56,616	65,425	63,856	63,210	62,414	61,559	-1.5%	
AGR	-26.0%	15.6%	-2.4%	-1.0%	-1.3%	-1.4%		
<b>Revenue (\$M)</b>	44,485	49,169	35,271	37,399	39,693	42,211	-3.7%	
AGR	-18.4%	10.5%	-28.3%	6.0%	6.1%	6.3%		
<b>Average Price (\$)</b>	786	752	552	592	636	686	-2.3%	
AGR	10.2%	-4.4%	-26.5%	7.1%	7.5%	7.8%		
<b>Installed Base (K)</b>	294,331	287,450	279,757	272,254	265,464	259,503	-2.5%	
AGR	-3.6%	-2.3%	-2.7%	-2.7%	-2.5%	-2.2%		
<b>Removal Age (Y)</b>	5.07	5.05	5.19	5.27	5.29	5.30	1.2%	
AGR	9.2%	-0.5%	2.9%	1.5%	0.4%	0.1%		
<b>Average Installed Base Age (Y)</b>	4.43	4.52	4.57	4.59	4.59	4.58	0.3%	
AGR	5.3%	2.0%	1.2%	0.4%	0.0%	-0.3%		
<b>Replacement Cycle Length (Y)</b>	5.35	4.98	4.91	4.85	4.84	4.84	-0.7%	
AGR	0.9%	-7.0%	-1.3%	-1.2%	-0.3%	0.2%		
<b>Units per Households (#)</b>	2.22	2.14	2.07	1.99	1.92	1.86	-3.4%	
AGR	-5.0%	-3.4%	-3.6%	-3.6%	-3.4%	-3.1%		
<b>Market Penetration (%)</b>	99.7%	99.8%	99.9%	99.9%	99.9%	100.0%	0.3%	
AGR								

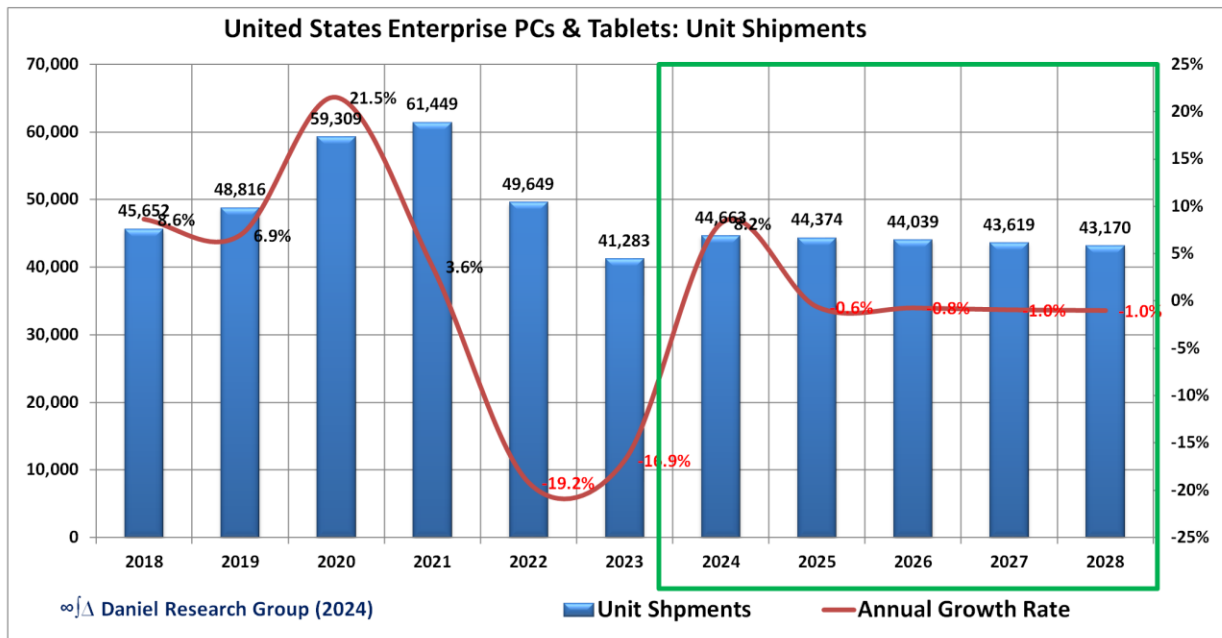
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# Enterprise

United States Enterprise PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	41,283	44,663	44,374	44,039	43,619	43,170	-0.8%	
AGR	-16.9%	8.2%	-0.6%	-0.8%	-1.0%	-1.0%		
<b>Revenue (\$M)</b>	28,137	32,259	32,408	32,618	32,758	32,869	0.5%	
AGR	-21.4%	14.7%	0.5%	0.6%	0.4%	0.3%		
<b>Average Price (\$)</b>	682	722	730	741	751	761	1.3%	
AGR	-5.5%	6.0%	1.1%	1.4%	1.4%	1.4%		
<b>Installed Base (K)</b>	157,469	160,408	162,702	164,017	164,471	164,238	0.6%	
AGR	1.2%	1.9%	1.4%	0.8%	0.3%	-0.1%		
<b>Removal Age (Y)</b>	4.50	4.47	4.54	4.59	4.64	4.70	1.2%	
AGR	12.5%	-0.6%	1.6%	1.1%	1.2%	1.1%		
<b>Average Installed Base Age (Y)</b>	4.11	4.14	4.16	4.19	4.23	4.26	0.7%	
AGR	1.9%	0.5%	0.6%	0.8%	0.8%	0.7%		
<b>Replacement Cycle Length (Y)</b>	5.00	4.84	4.87	4.84	4.81	4.78	-0.3%	
AGR	30.2%	-3.0%	0.5%	-0.6%	-0.6%	-0.5%		
<b>Units per Businesses (#)</b>	23.29	23.32	23.61	23.60	23.58	23.52	0.2%	
AGR	-1.2%	0.1%	1.2%	0.0%	-0.1%	-0.3%		
<b>Market Penetration (%)</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Change '20-'25	Trend
							0.0%	

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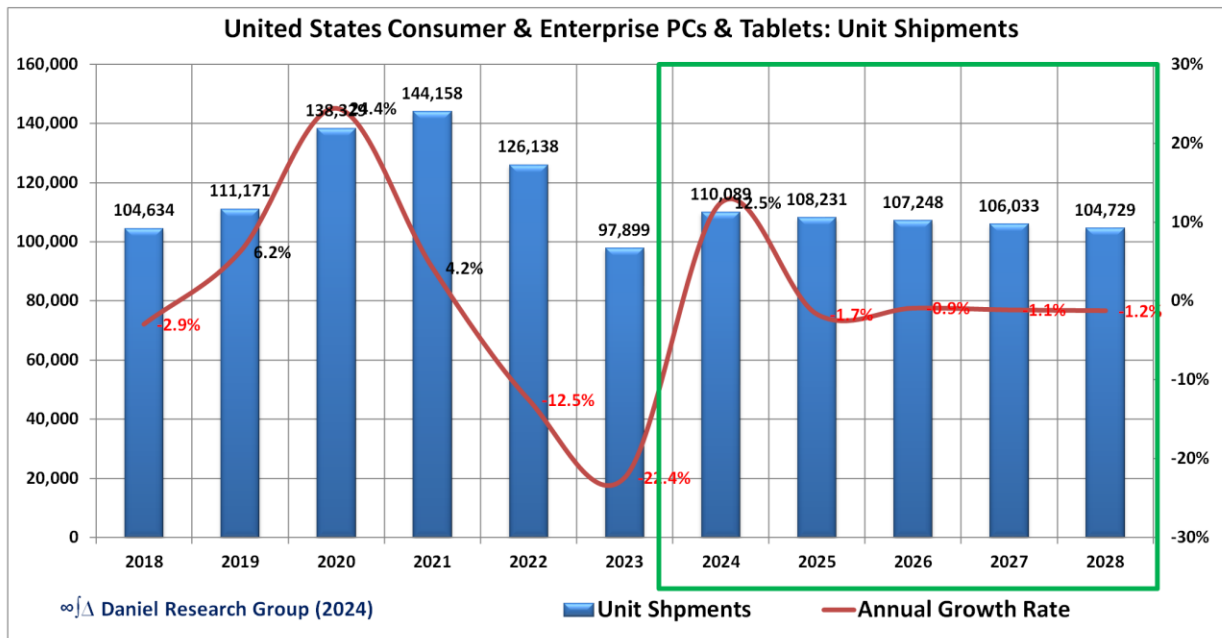
■ Unit Shpments

— Annual Growth Rate

## Total PCs and Tablets

United States Consumer & Enterprise PCs & Tablets								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	97,899	110,089	108,231	107,248	106,033	104,729	-1.2%	
AGR	-22.4%	12.5%	-1.7%	-0.9%	-1.1%	-1.2%		
Revenue (\$M)	72,622	81,429	67,678	70,016	72,451	75,080	-2.0%	
AGR	-19.6%	12.1%	-16.9%	3.5%	3.5%	3.6%		
Average Price (\$)	742	740	625	653	683	717	-0.8%	
AGR	3.6%	-0.3%	-15.5%	4.4%	4.7%	4.9%		
Installed Base (K)	451,801	447,857	442,460	436,271	429,935	423,741	-1.4%	
AGR	-2.0%	-0.9%	-1.2%	-1.4%	-1.5%	-1.4%		
Removal Age (Y)	4.84	4.81	4.93	4.99	5.03	5.06	1.2%	
AGR	10.6%	-0.6%	2.3%	1.4%	0.7%	0.5%		
Average Installed Base Age (Y)	4.30	4.37	4.41	4.44	4.45	4.45	0.5%	
AGR	4.2%	1.6%	1.0%	0.6%	0.3%	0.1%		
Replacement Cycle Length (Y)	5.22	4.93	4.89	4.85	4.83	4.82	-0.5%	
AGR	11.9%	-5.6%	-0.7%	-1.0%	-0.4%	-0.1%		
Units per Households & Businesses (#)	3.24	3.18	3.11	3.04	2.97	2.90	-2.3%	
AGR	-3.5%	-2.0%	-2.1%	-2.3%	-2.3%	-2.3%		
Market Penetration (%)	99.7%	99.8%	99.9%	99.9%	99.9%	100.0%	0.2%	
	2023	2024	2025	2026	2027	2028	Change '20-'25	Trend

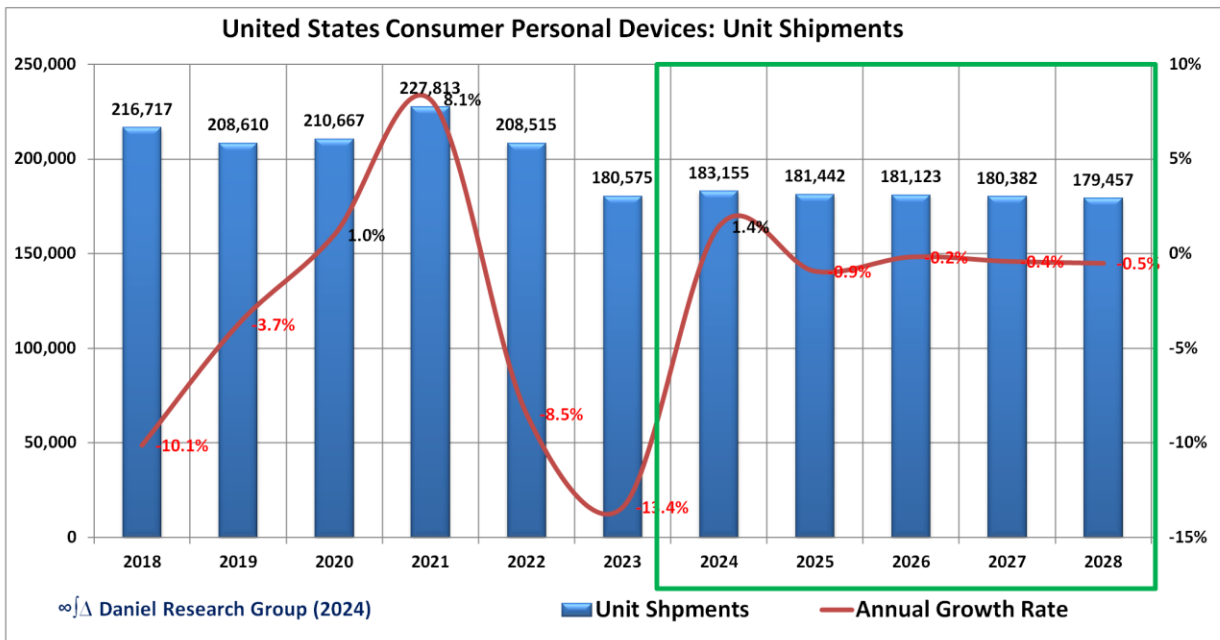
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## Total Personal Devices Consumer

United States Consumer Personal Devices								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
<b>Unit Shipments (K)</b>	180,575	183,155	181,442	181,123	180,382	179,457	-0.5%	
AGR	-13.4%	1.4%	-0.9%	-0.2%	-0.4%	-0.5%		
<b>Revenue (\$M)</b>	141,904	142,881	129,934	133,403	136,829	140,382	-0.4%	
AGR	-3.8%	0.7%	-9.1%	2.7%	2.6%	2.6%		
<b>Average Price (\$)</b>	786	780	716	737	759	782	0.1%	
AGR	11.1%	-0.7%	-8.2%	2.9%	3.0%	3.1%		
<b>Installed Base (K)</b>	924,594	899,534	872,334	846,291	823,488	800,716	-2.9%	
AGR	-3.1%	-2.7%	-3.0%	-3.0%	-2.7%	-2.8%		
<b>Removal Age (Y)</b>	5.38	5.52	5.74	5.81	5.76	5.78	1.2%	
AGR	6.0%	2.5%	4.0%	1.4%	-0.9%	0.3%		
<b>Average Installed Base Age (Y)</b>	5.72	5.83	5.88	5.89	5.87	5.83	0.0%	
AGR	3.3%	2.0%	0.8%	0.0%	-0.2%	-0.7%		
<b>Replacement Cycle Length (Y)</b>	5.41	5.32	5.18	5.09	5.05	4.96	-1.7%	
AGR	1.6%	-1.6%	-2.6%	-1.9%	-0.6%	-1.8%		
<b>Units per Households (#)</b>	6.96	6.70	6.44	6.19	5.97	5.75	-3.7%	
AGR	-4.4%	-3.7%	-3.9%	-3.9%	-3.6%	-3.6%		
	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%	

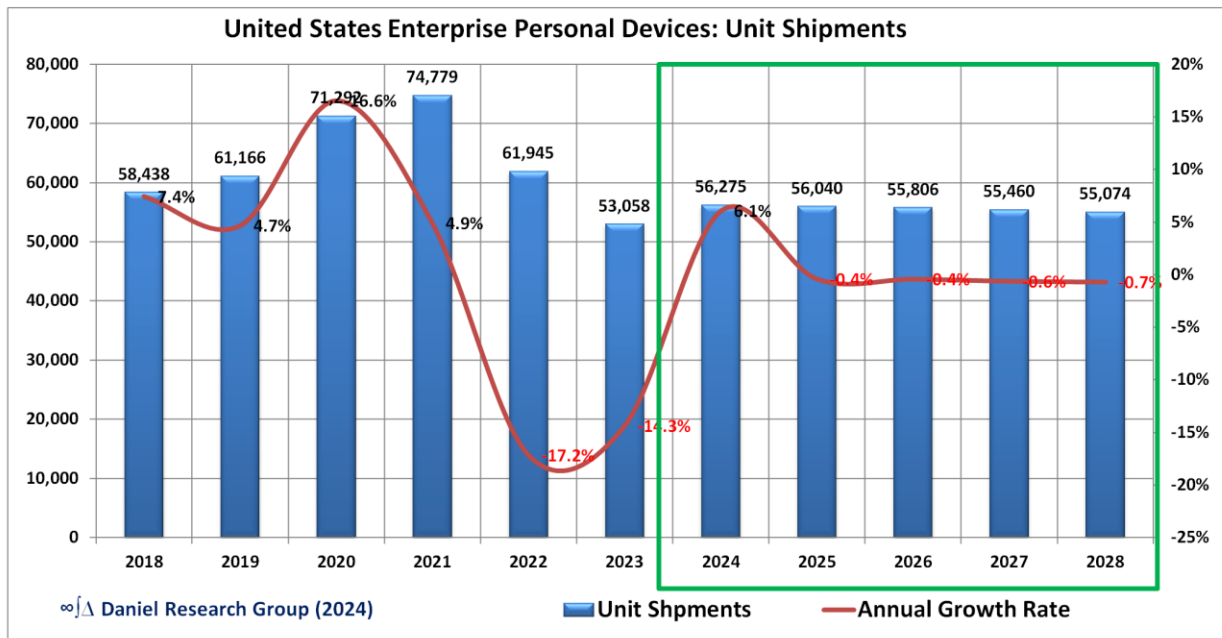
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# Enterprise

United States Enterprise Personal Devices									
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend	
Unit Shipments (K)	53,058	56,275	56,040	55,806	55,460	55,074	-0.5%		
AGR	-14.3%	6.1%	-0.4%	-0.4%	-0.6%	-0.7%			
Revenue (\$M)	38,914	43,167	43,643	44,236	44,745	45,223	1.2%		
AGR	-15.4%	10.9%	1.1%	1.4%	1.1%	1.1%			
Average Price (\$)	733	767	779	793	807	821	1.7%		
AGR	-1.2%	4.6%	1.5%	1.8%	1.8%	1.8%			
Installed Base (K)	214,627	213,311	213,255	212,575	211,202	210,278	-0.4%		
AGR	-1.4%	-0.6%	0.0%	-0.3%	-0.6%	-0.4%			
Removal Age (Y)	5.09	5.00	4.94	4.91	4.91	4.87	-0.6%		
AGR	9.4%	-1.9%	-1.1%	-0.6%	-0.1%	-0.7%			
Average Installed Base Age (Y)	4.87	4.82	4.78	4.76	4.74	4.73	-0.5%		
AGR	0.0%	-1.0%	-0.7%	-0.5%	-0.4%	-0.2%			
Replacement Cycle Length (Y)	4.82	4.70	4.80	4.76	4.72	4.76	0.3%		
AGR	19.1%	-2.4%	2.1%	-0.8%	-1.0%	0.8%			
Units per Businesses (#)	31.78	31.04	30.96	30.60	30.29	30.12	-0.7%		
AGR	-3.9%	-2.3%	-0.3%	-1.2%	-1.0%	-0.6%			
Market Penetration (%)	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%	Change '20-'25	Trend	
							0.1%		

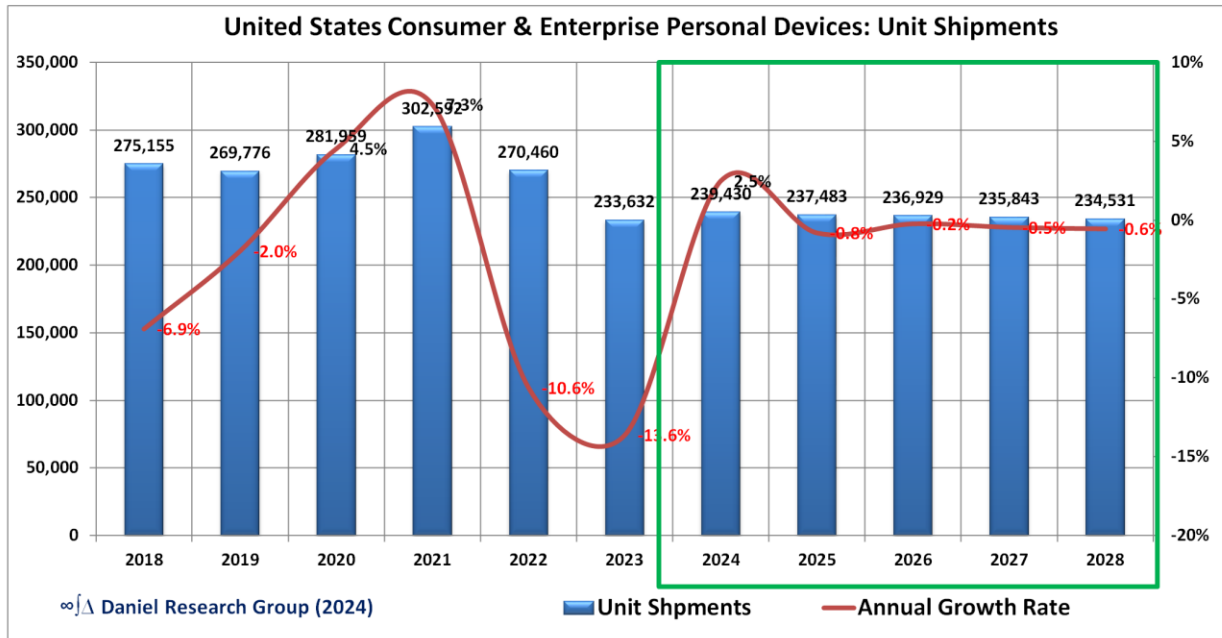
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# Total Personal Devices

United States Consumer & Enterprise Personal Devices								
	2023	2024	2025	2026	2027	2028	CAGR '24-'28	Trend
Unit Shipments (K)	233,632	239,430	237,483	236,929	235,843	234,531	-0.5%	
AGR	-13.6%	2.5%	-0.8%	-0.2%	-0.5%	-0.6%		
Revenue (\$M)	180,819	186,048	173,577	177,639	181,574	185,605	-0.1%	
AGR	-6.5%	2.9%	-6.7%	2.3%	2.2%	2.2%		
Average Price (\$)	774	777	731	750	770	791	0.5%	
AGR	8.2%	0.4%	-5.9%	2.6%	2.7%	2.8%		
Installed Base (K)	1,139,221	1,112,845	1,085,589	1,058,866	1,034,690	1,010,993	-2.4%	
AGR	-2.8%	-2.3%	-2.4%	-2.5%	-2.3%	-2.3%		
Removal Age (Y)	5.35	5.43	5.56	5.61	5.58	5.58	0.6%	
AGR	6.9%	1.5%	2.4%	0.9%	-0.5%	-0.1%		
Average Installed Base Age (Y)	5.57	5.64	5.67	5.67	5.65	5.61	-0.1%	
AGR	2.5%	1.3%	0.5%	-0.1%	-0.3%	-0.6%		
Replacement Cycle Length (Y)	5.28	5.19	5.10	5.02	4.98	4.92	-1.3%	
AGR	5.5%	-1.8%	-1.7%	-1.7%	-0.7%	-1.3%		
Units per Households & Businesses (#)	8.16	7.89	7.63	7.37	7.14	6.92	-3.2%	
AGR	-4.2%	-3.4%	-3.3%	-3.4%	-3.1%	-3.1%		
Market Penetration (%)	99.9%	99.9%	100.0%	100.0%	100.0%	100.0%	0.1%	

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# Market Model Variables

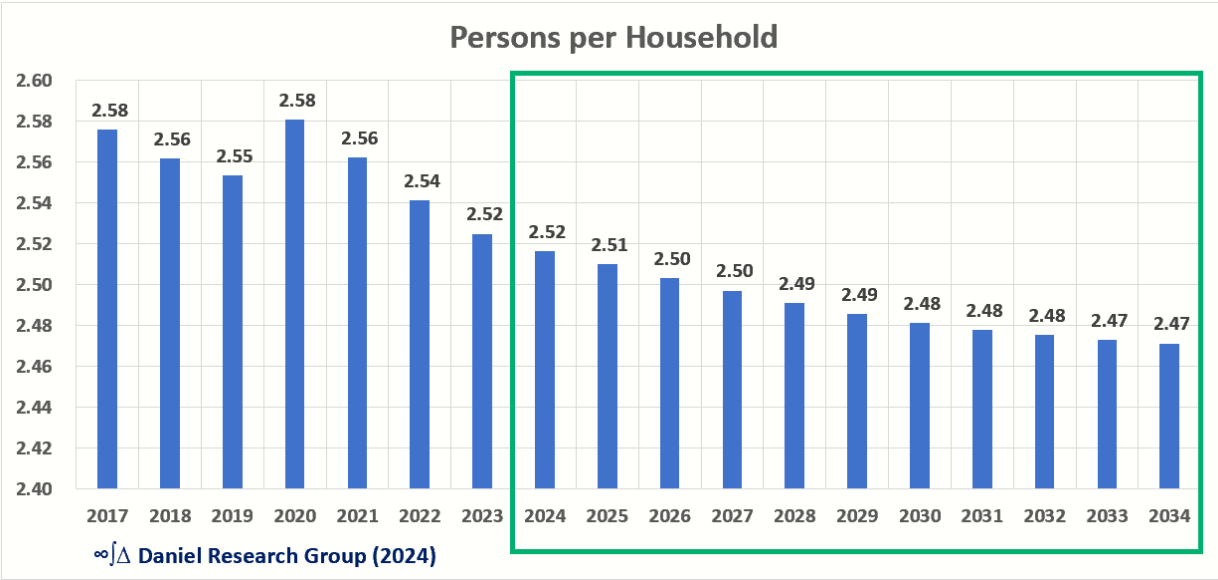
The market for almost any product or service can be defined in terms of six variables;

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.

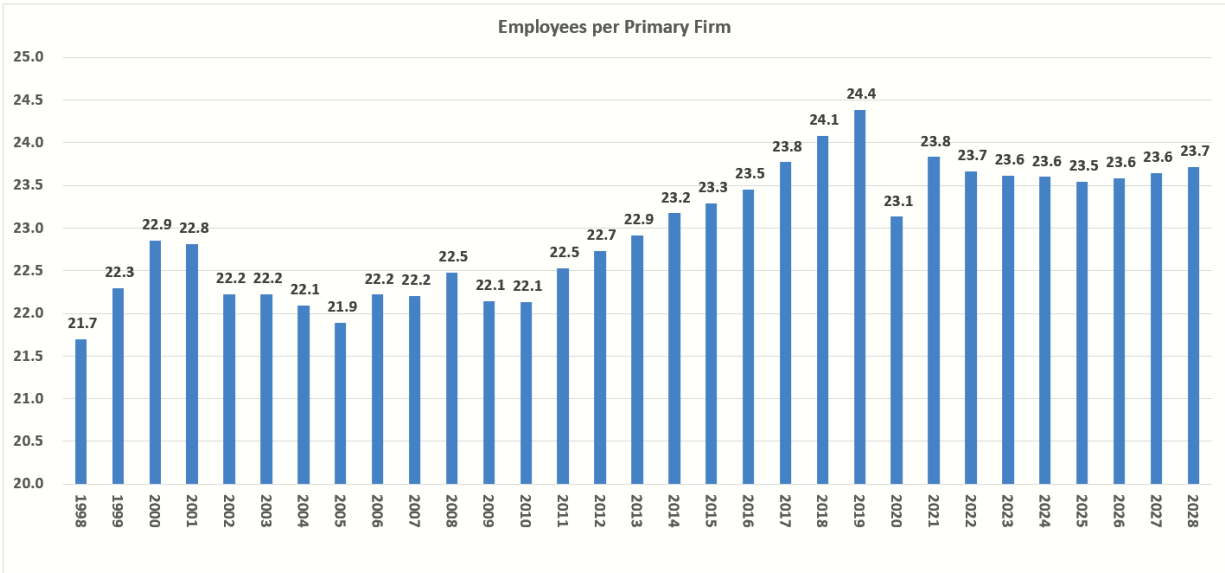
## Total Available Market (TAM)

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



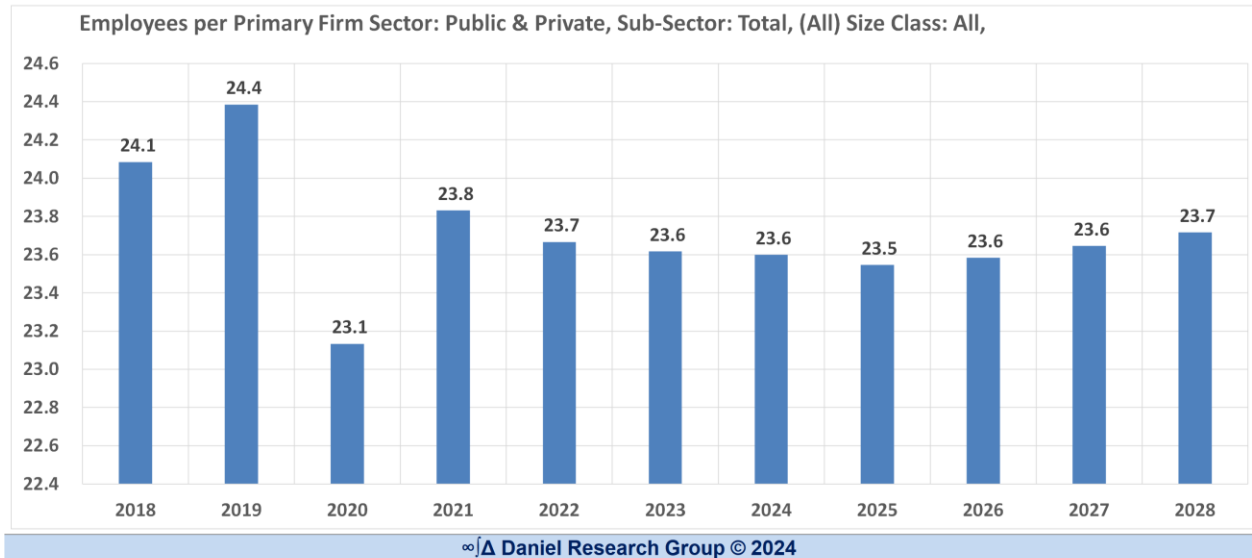
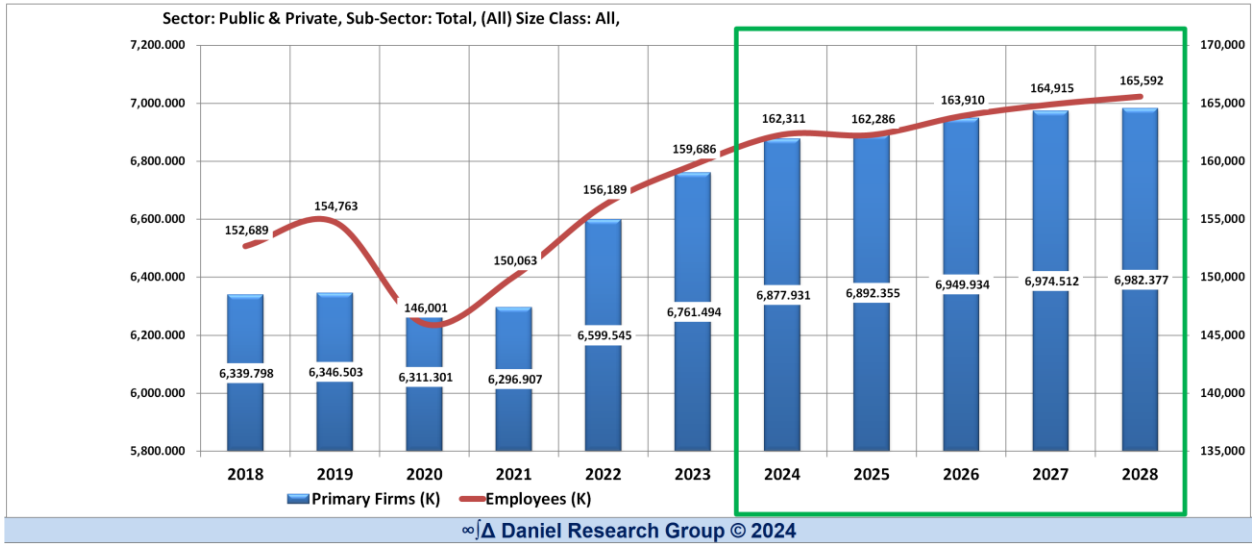
The long-term trend of slowly decreasing household size temporarily reverse2 during economic disruption as in 2011 and 2020.

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

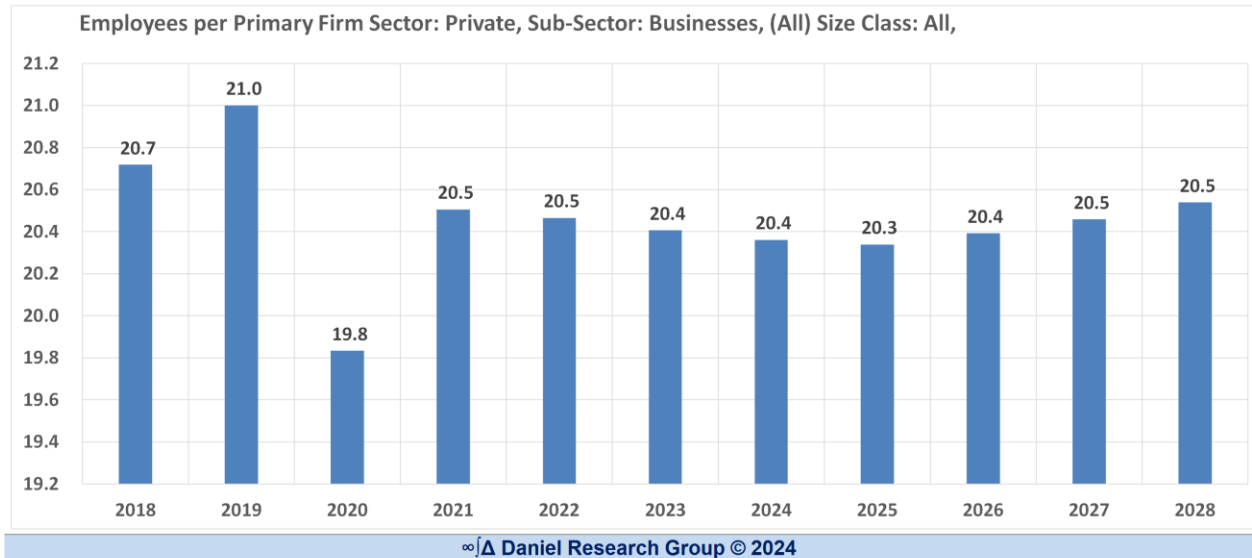
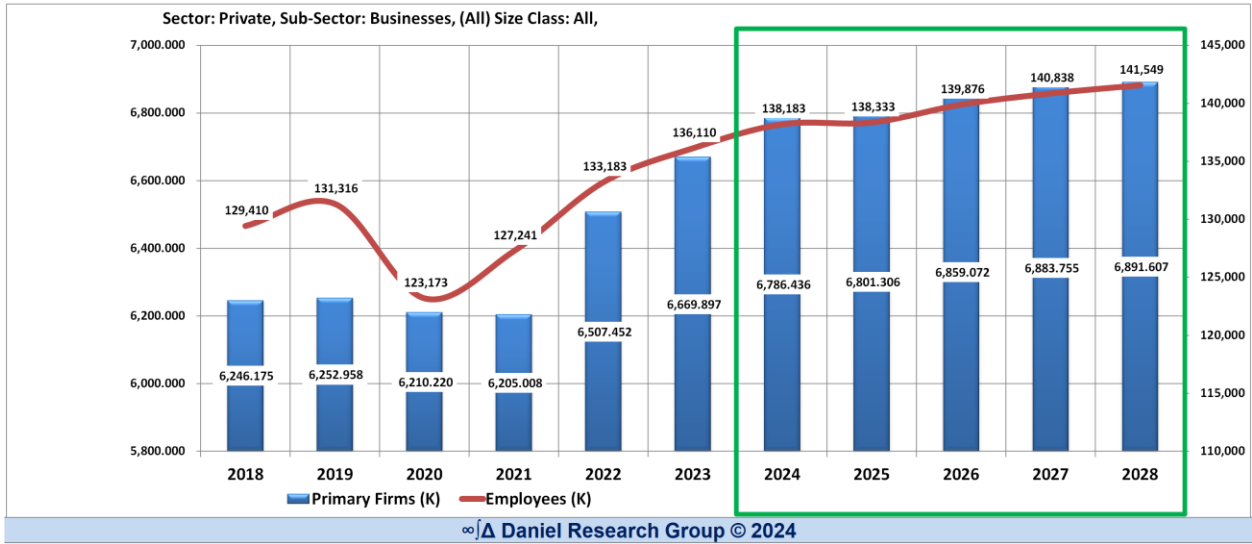


The long-term trend of increasing business size was disrupted by the pandemics. **DRGs Business Economic Demographic Database (BEDD)** forecast models predicted that the average size of business will start to increase again in 2025. The TAM used in the Enterprise Models is **Primary Firms** as computed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



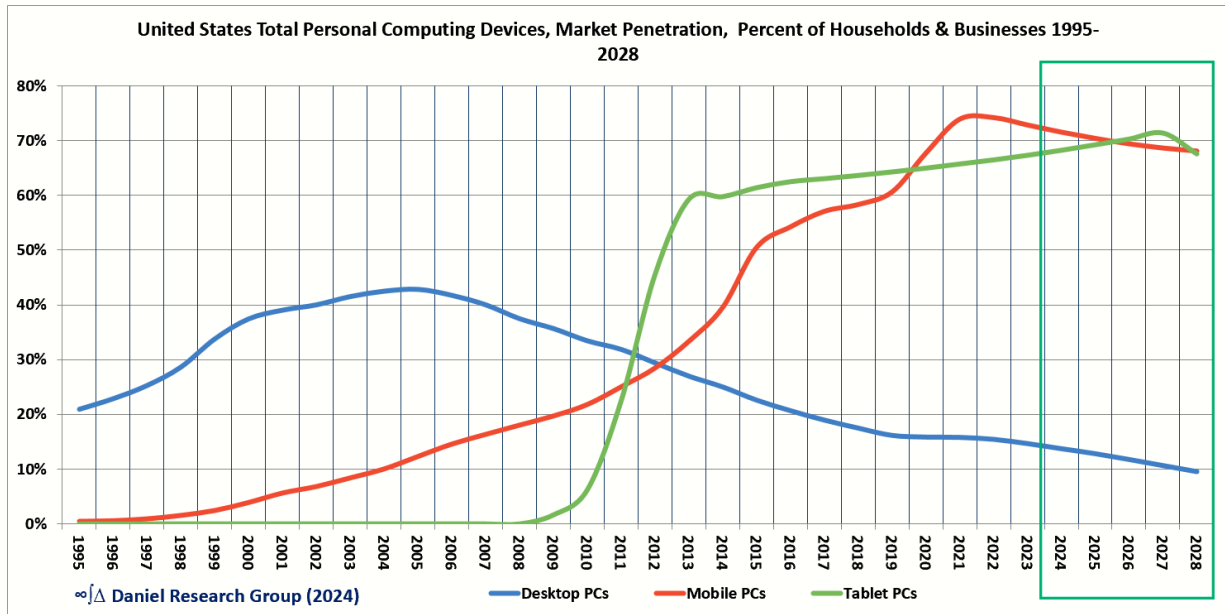
## Private Sector Only



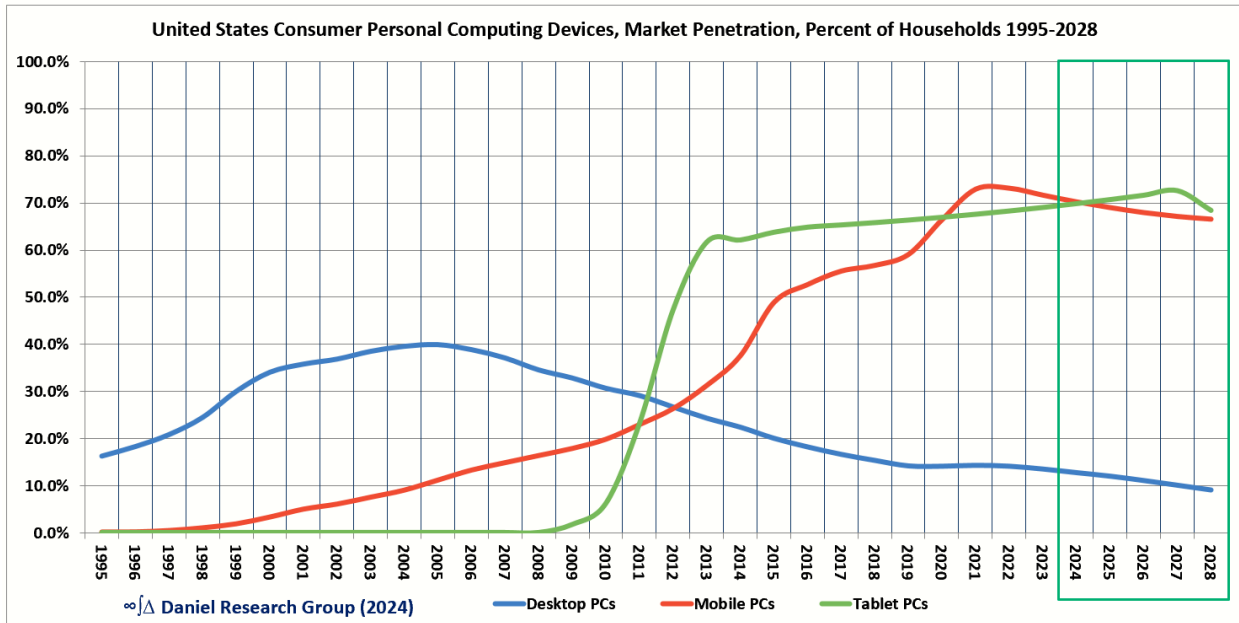
## Penetration

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.

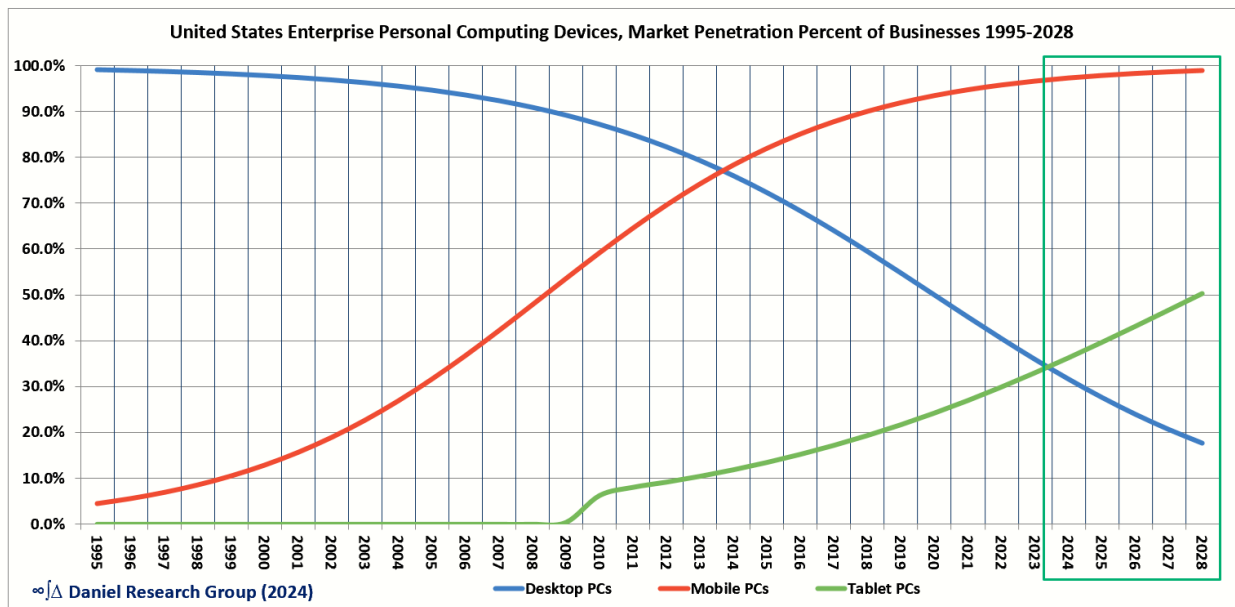
## Total PCs and Tablets



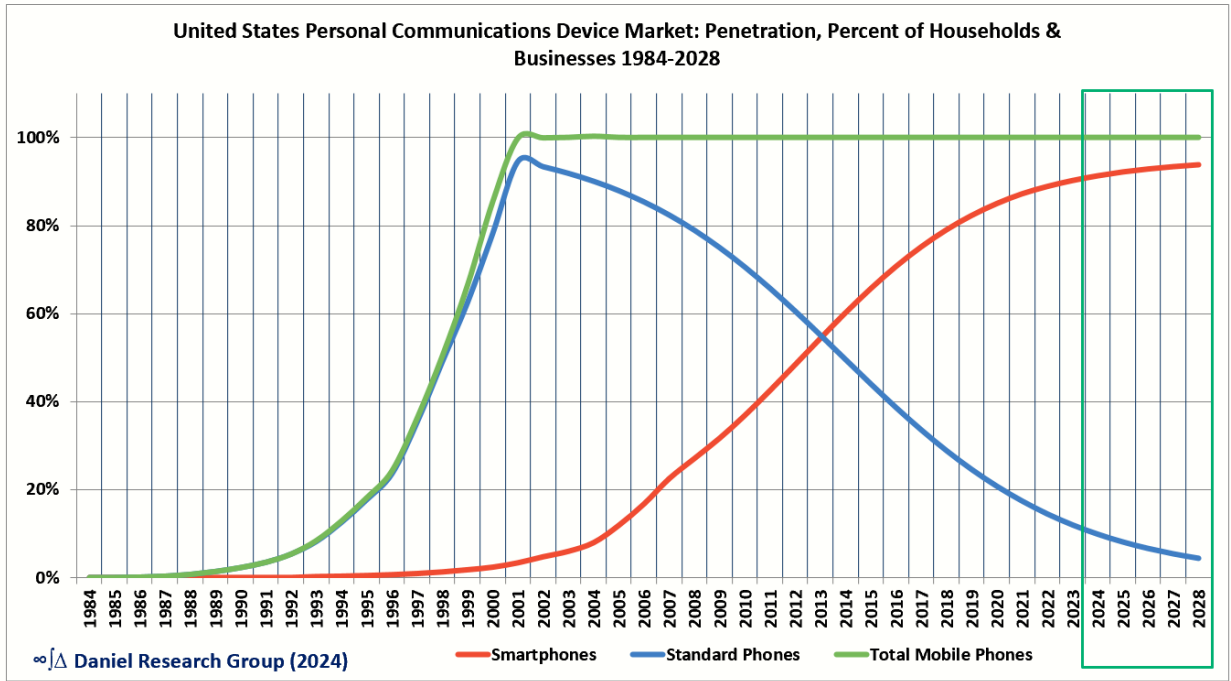
## Consumer PCs and Tablets



## Enterprise PCs and Tablets



# Mobile Phones

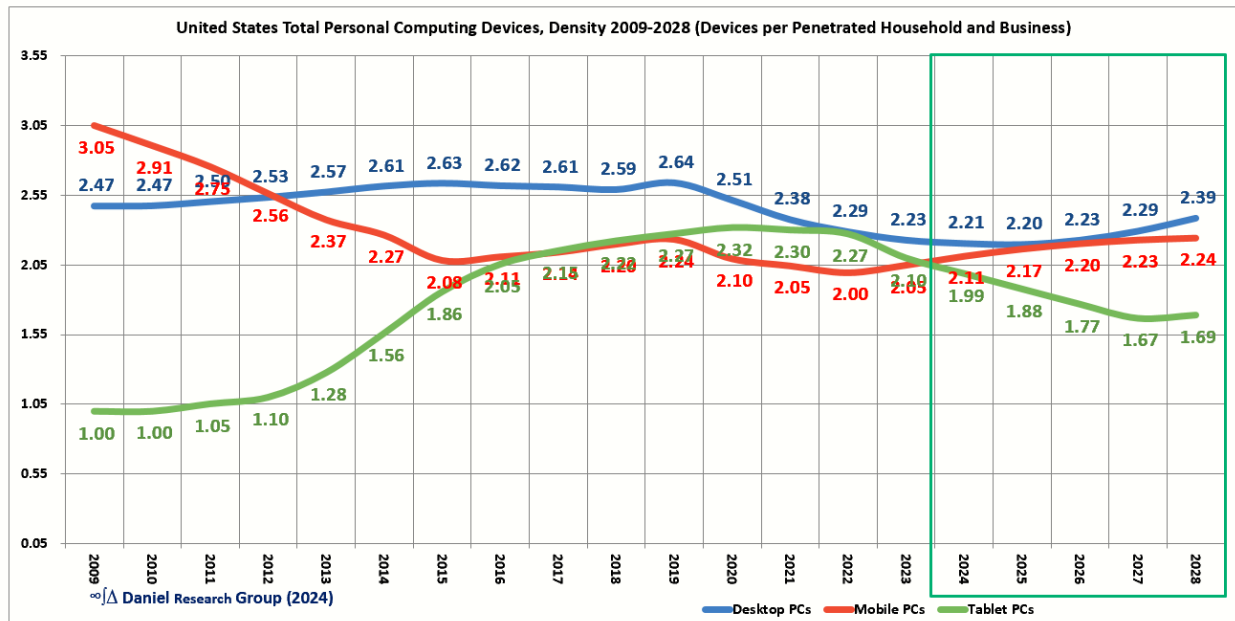


## Density

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.

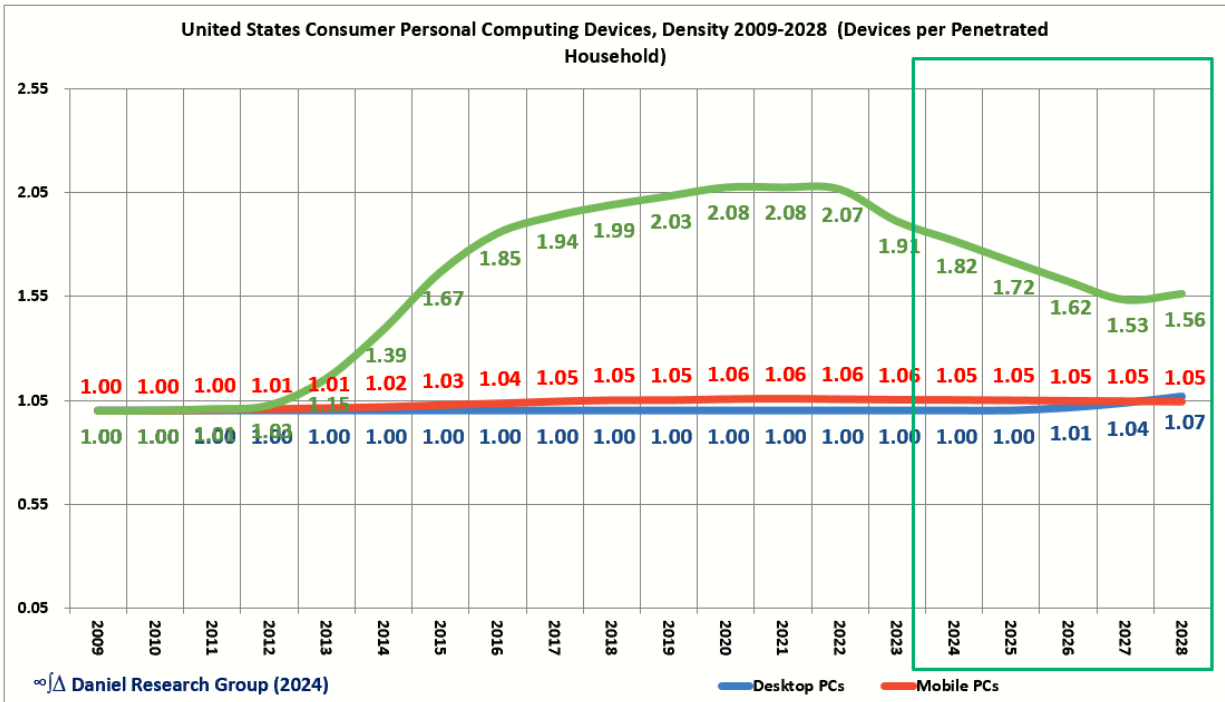
The significant increase densities for Mobile PCs reflects the excess buying in the Consumer Segments to support pandemic caused increase in Work From Home, Learn From Home and home entertainment use cases. The significant increase in desktop density in the Enterprise Segment in the forecast period is 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

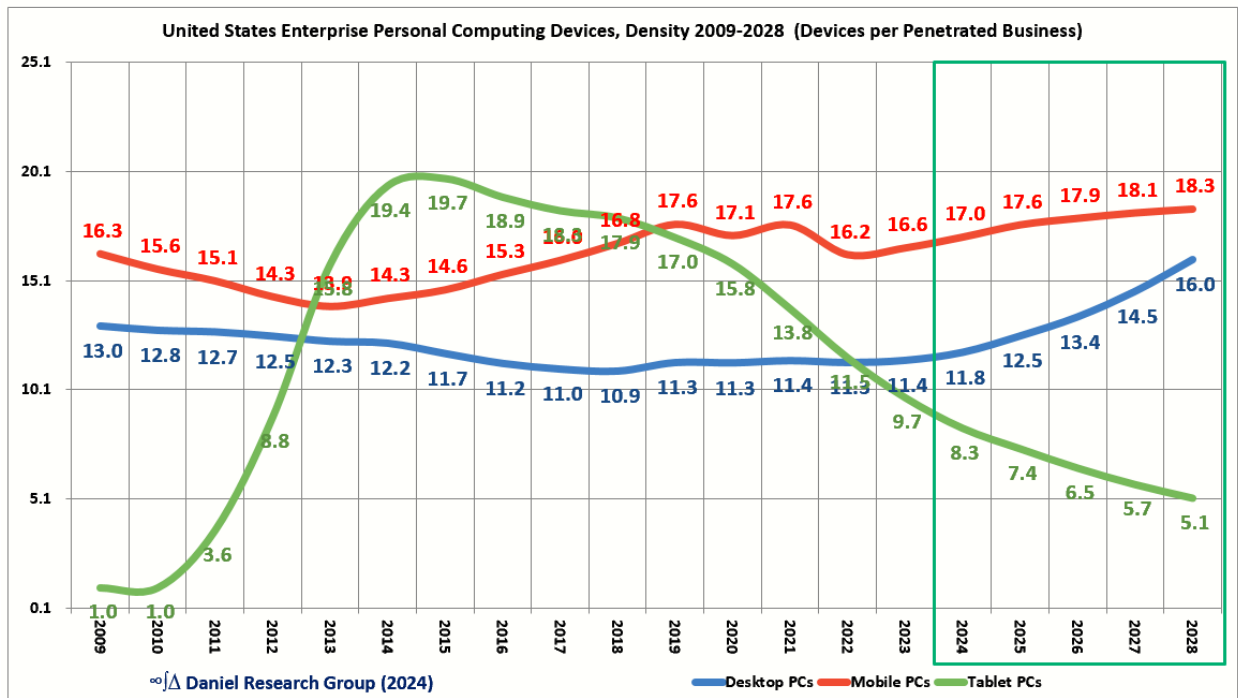




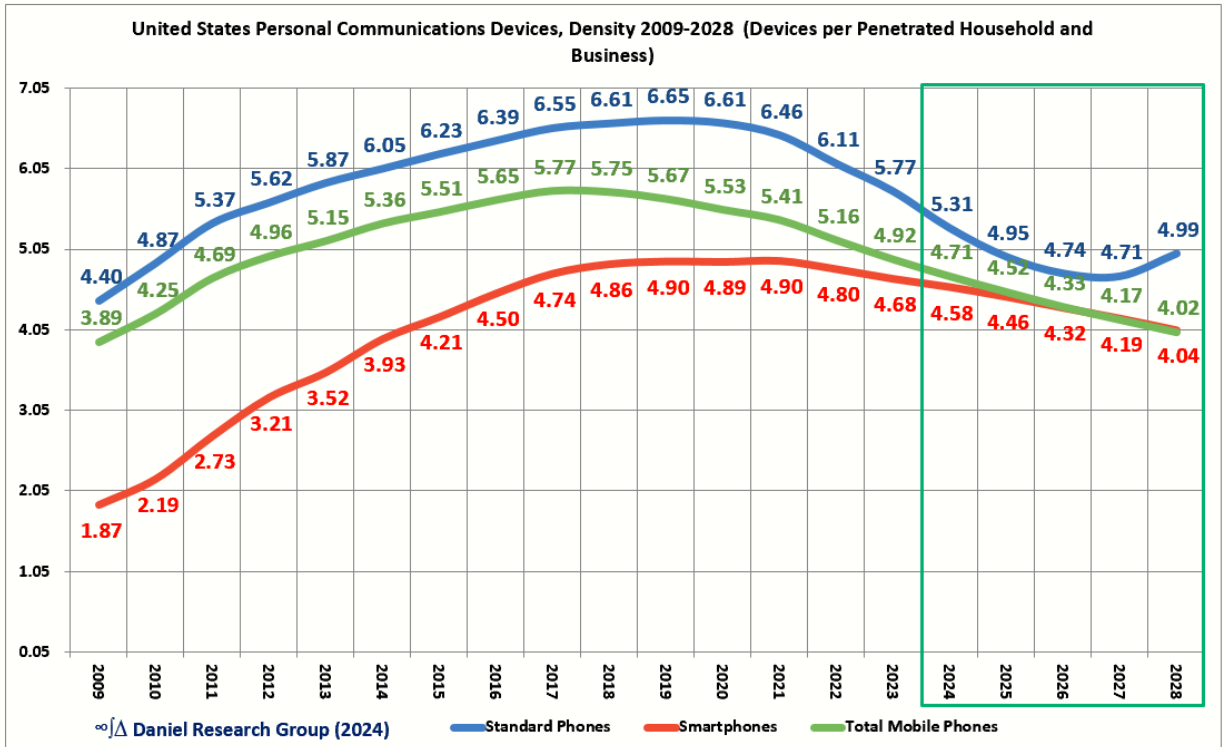
## Consumer



## Enterprise



## Mobile Phones



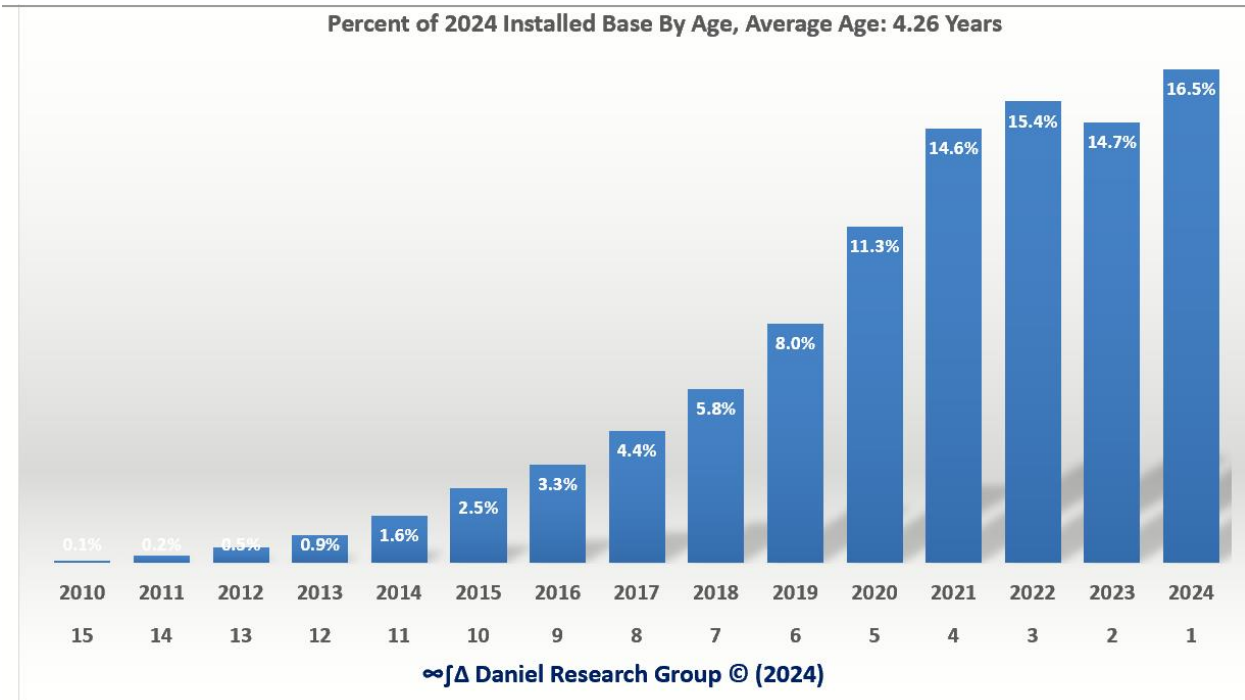
## Replacement Rates

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)

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

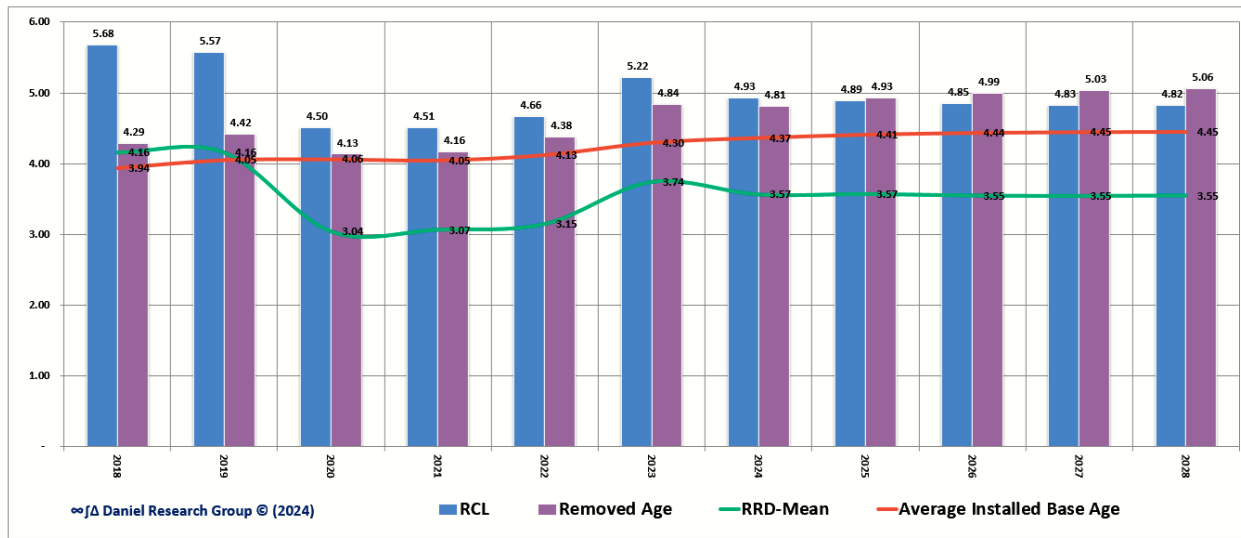
RCL is the length of time it will take for all the existing units in the Installed Base to be replaced given the current Installed Base size, Unit Shipments, and number of Units Removed from the Installed Base in that year. The **EQS** algorithm allows the RRD- $\mu$  to be adjusted to produce a target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

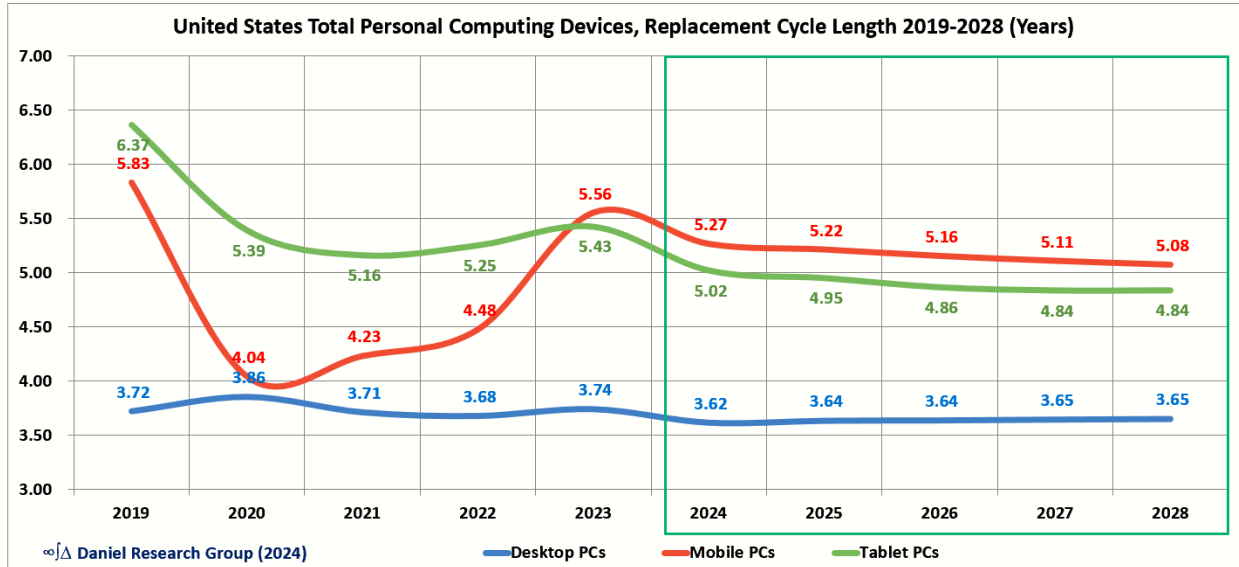
**Total PCs and Tablets**



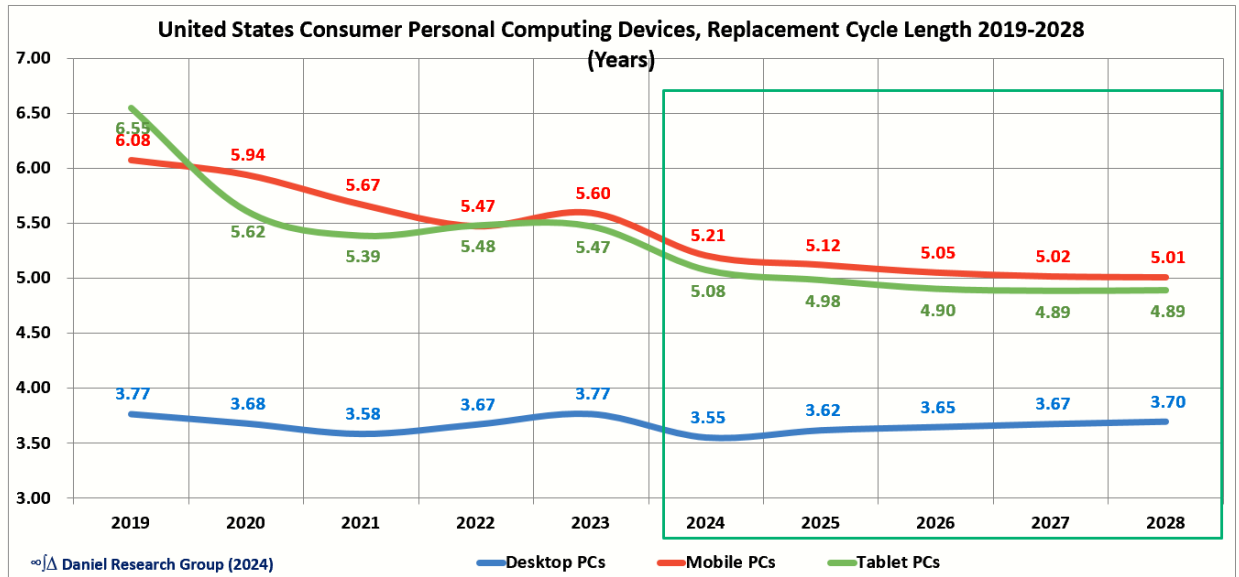
Each of the Age metrics answers a different question.

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?

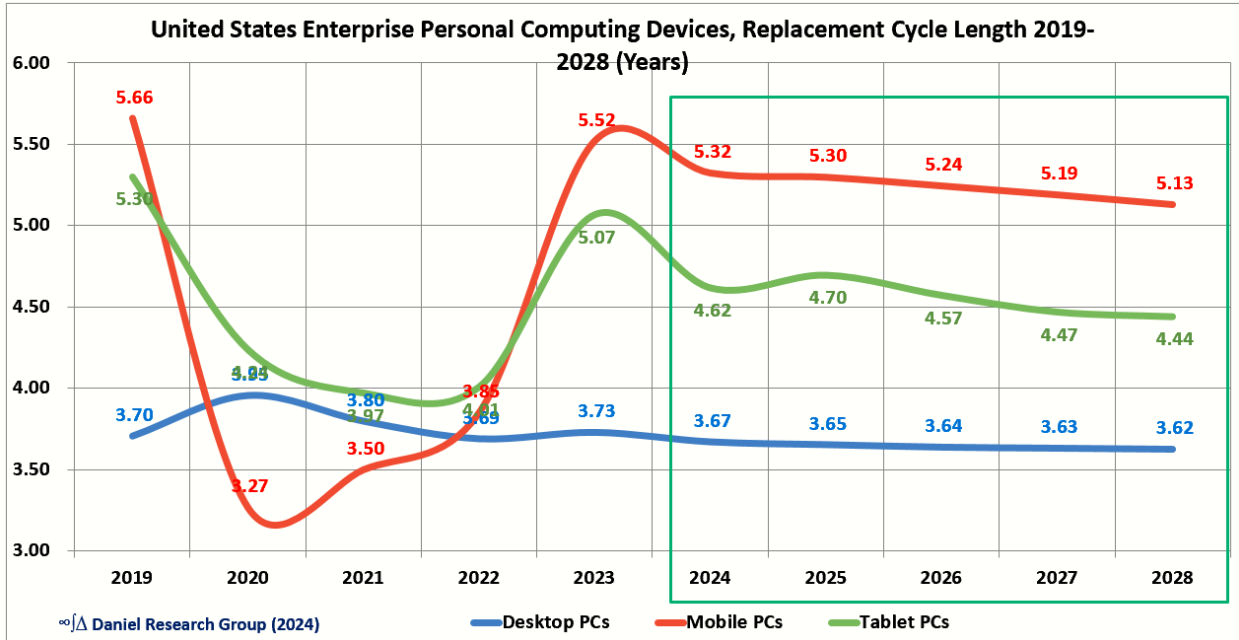
# Replacement Cycle Length Total



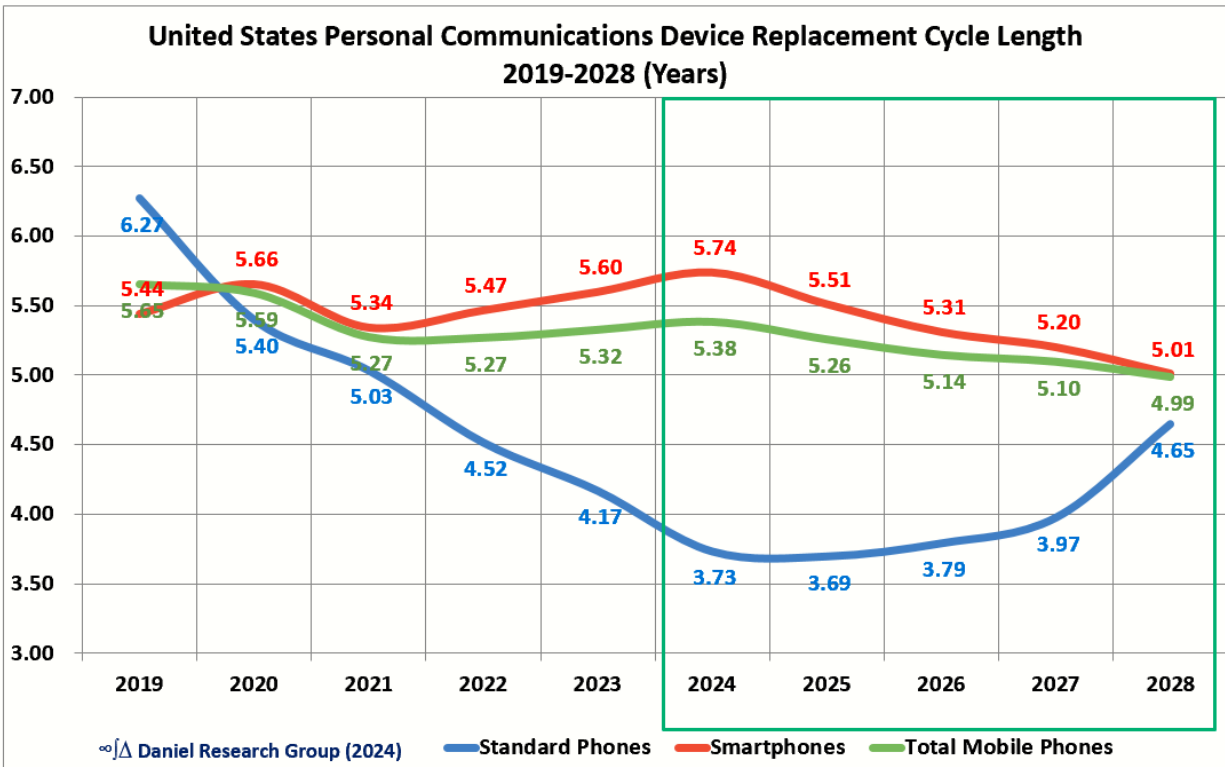
# Consumer



# Enterprise



## Mobile Phones



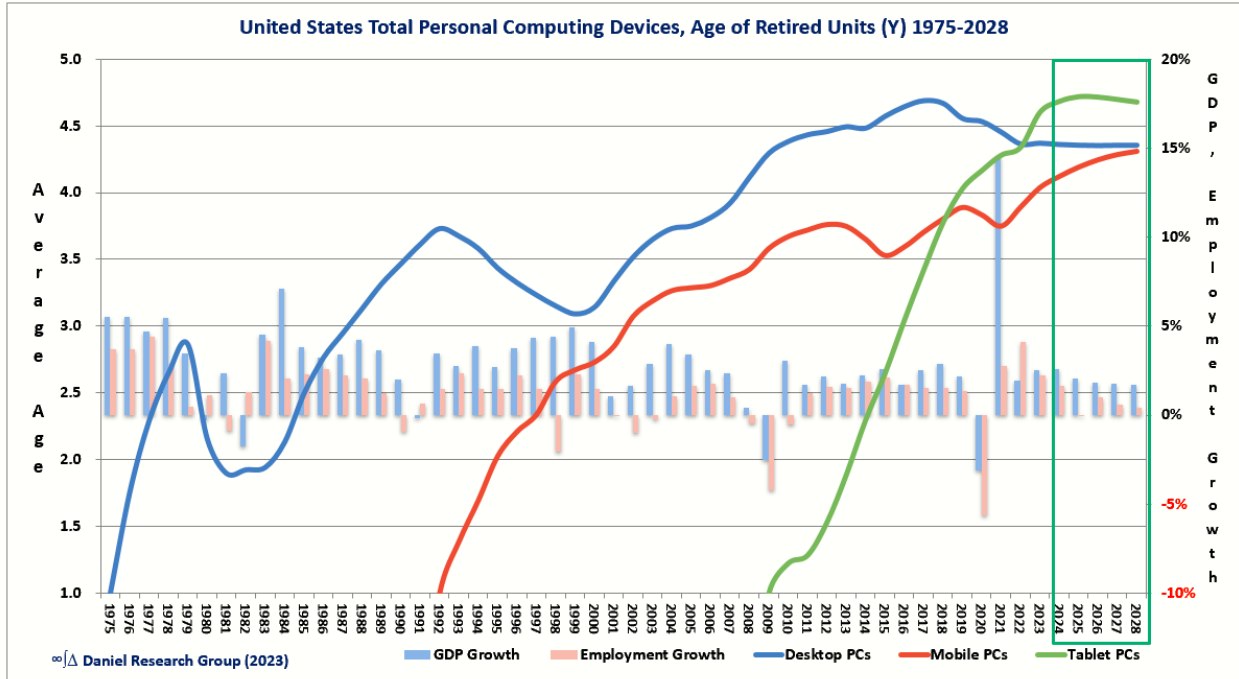


# Long-Term Charts

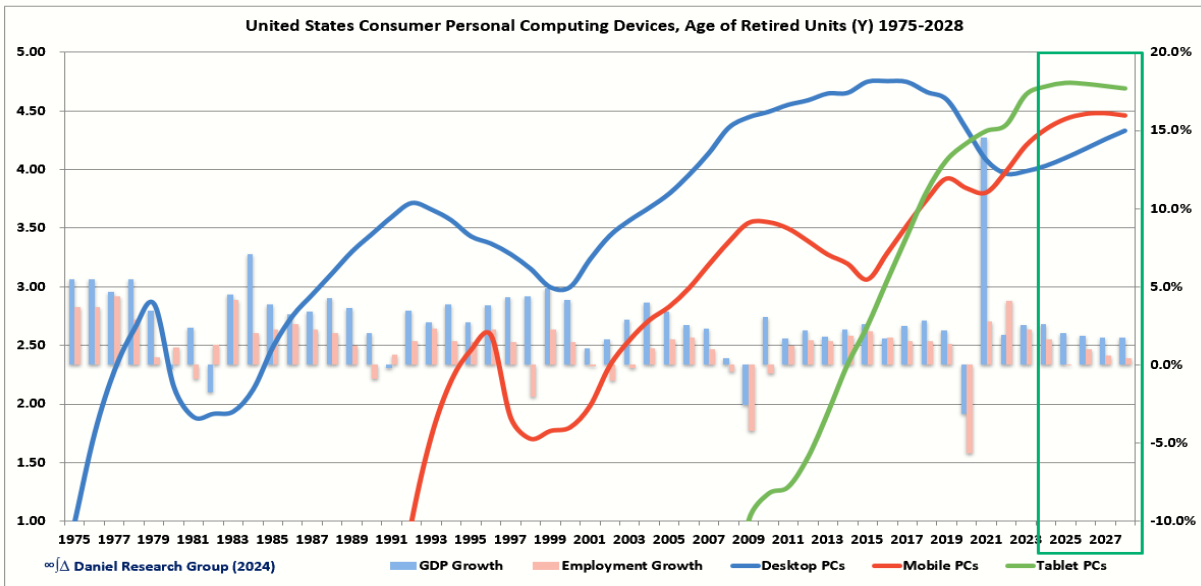
These charts provide additional historical context to better understand both the current state and the forecast in comparison to long-term trends.

## Average Removal Age

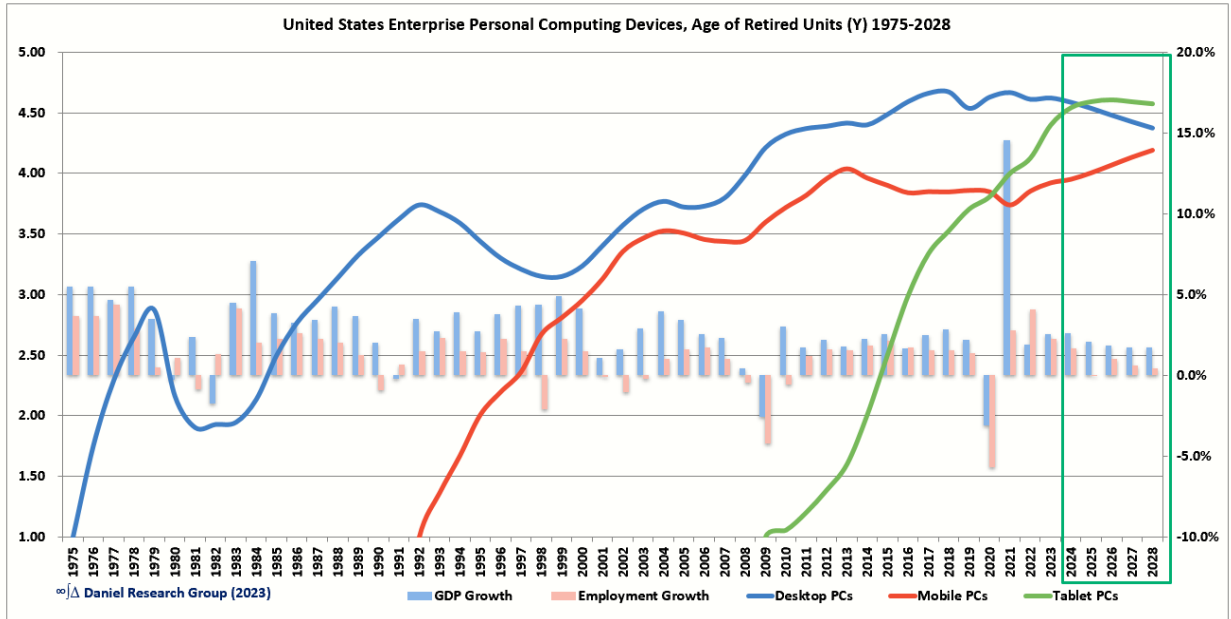
### Total



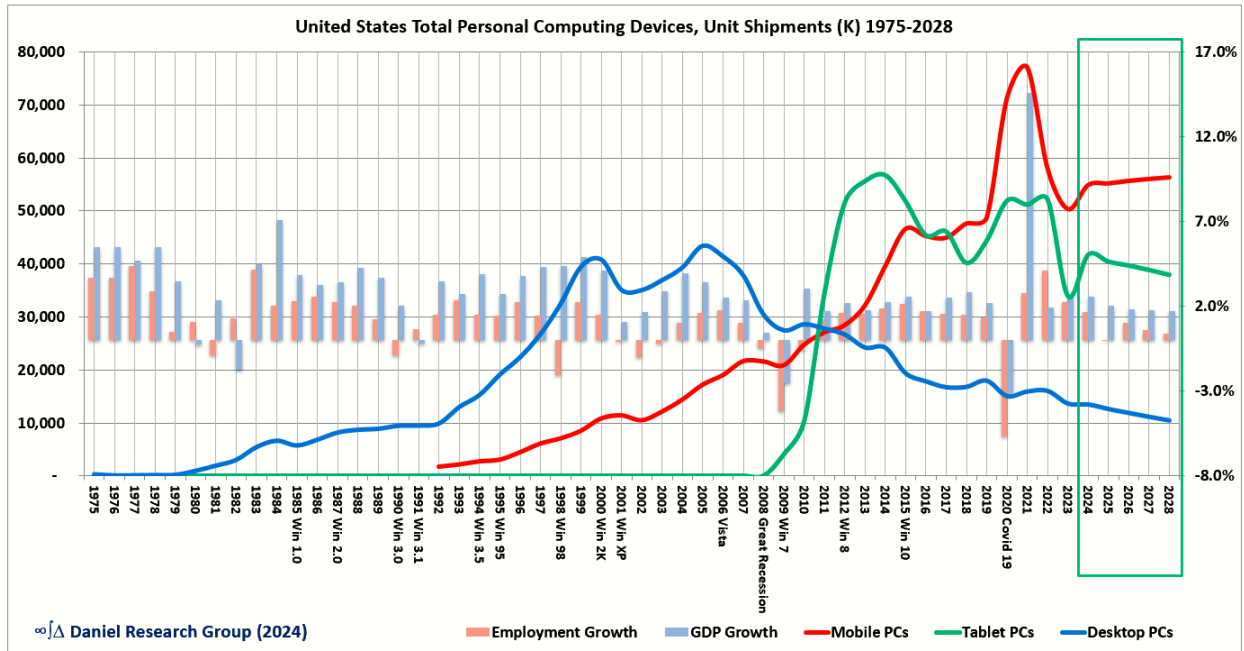
### Consumer



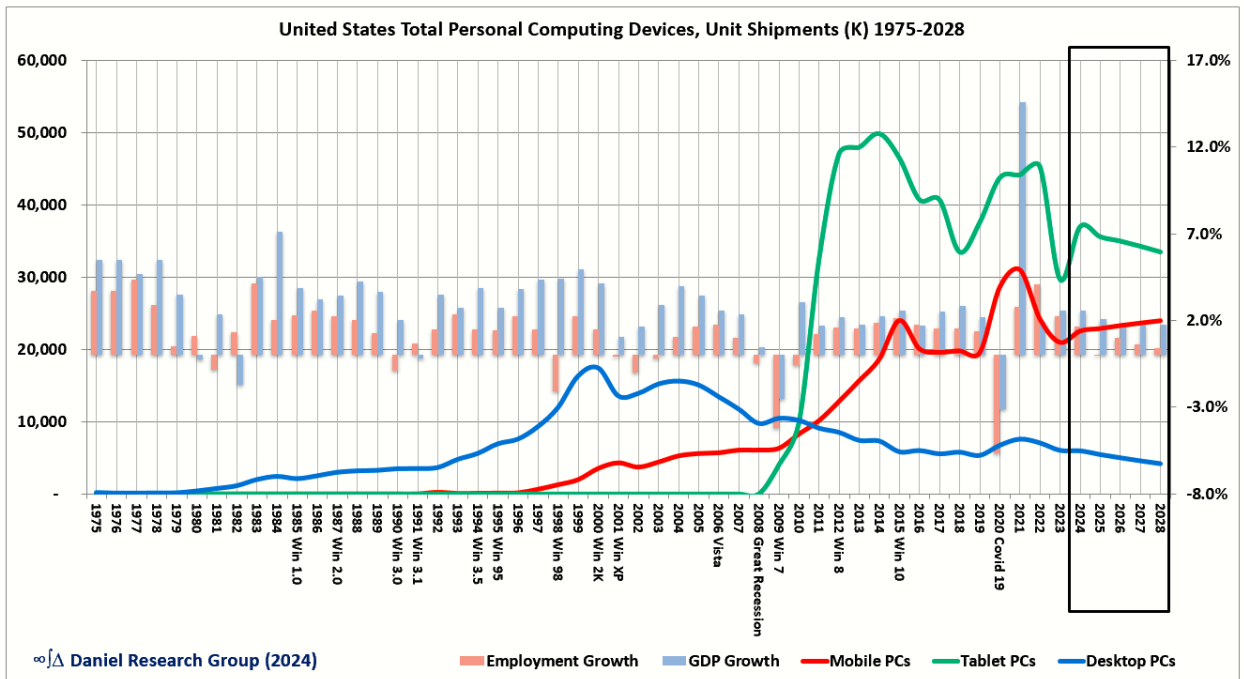
# Enterprise



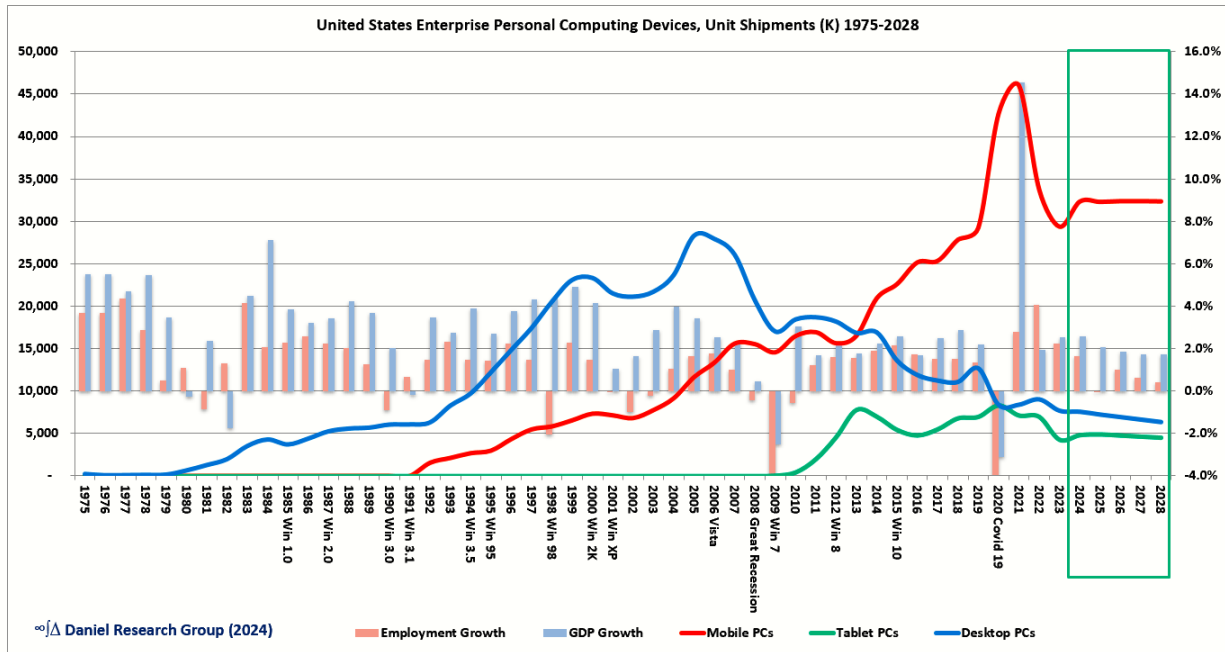
# Mobile Phones Unit Shipments Total



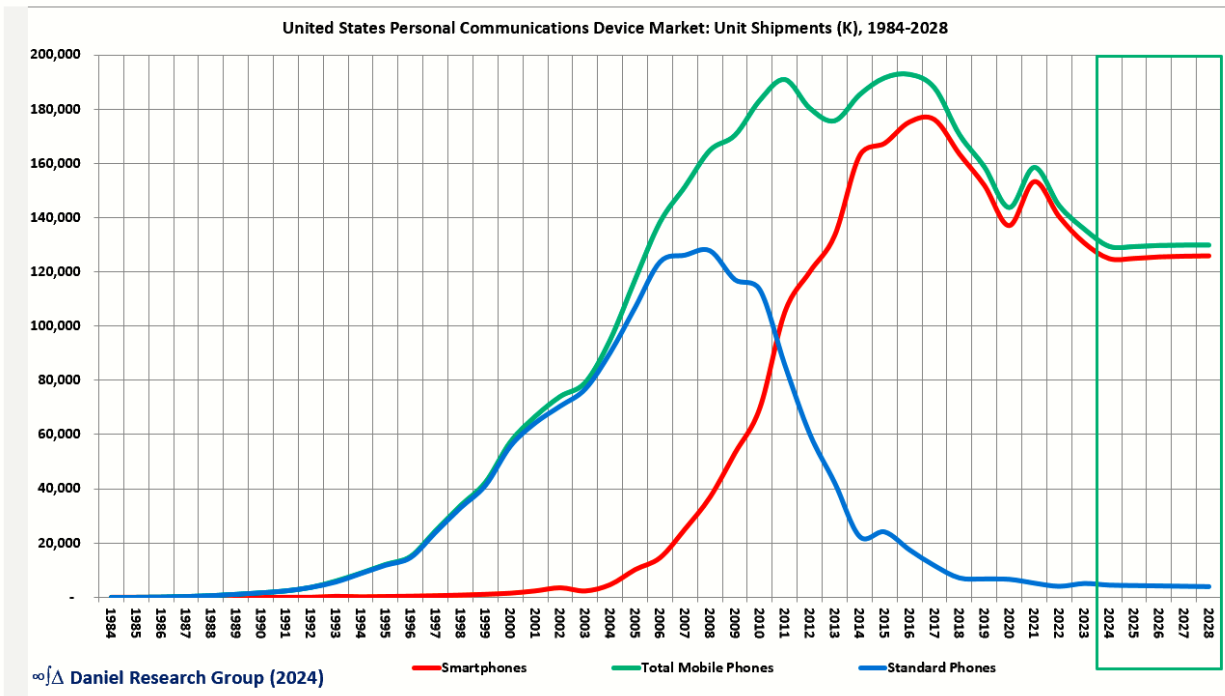
# Consumer



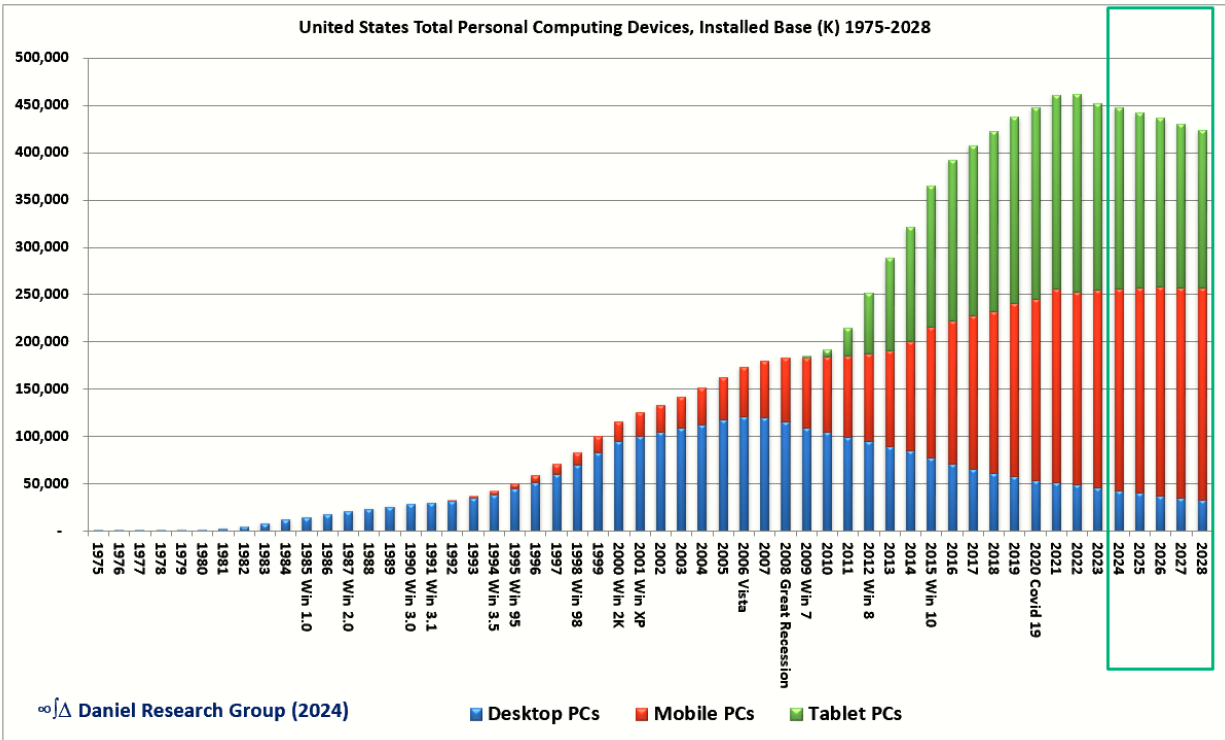
# Enterprise



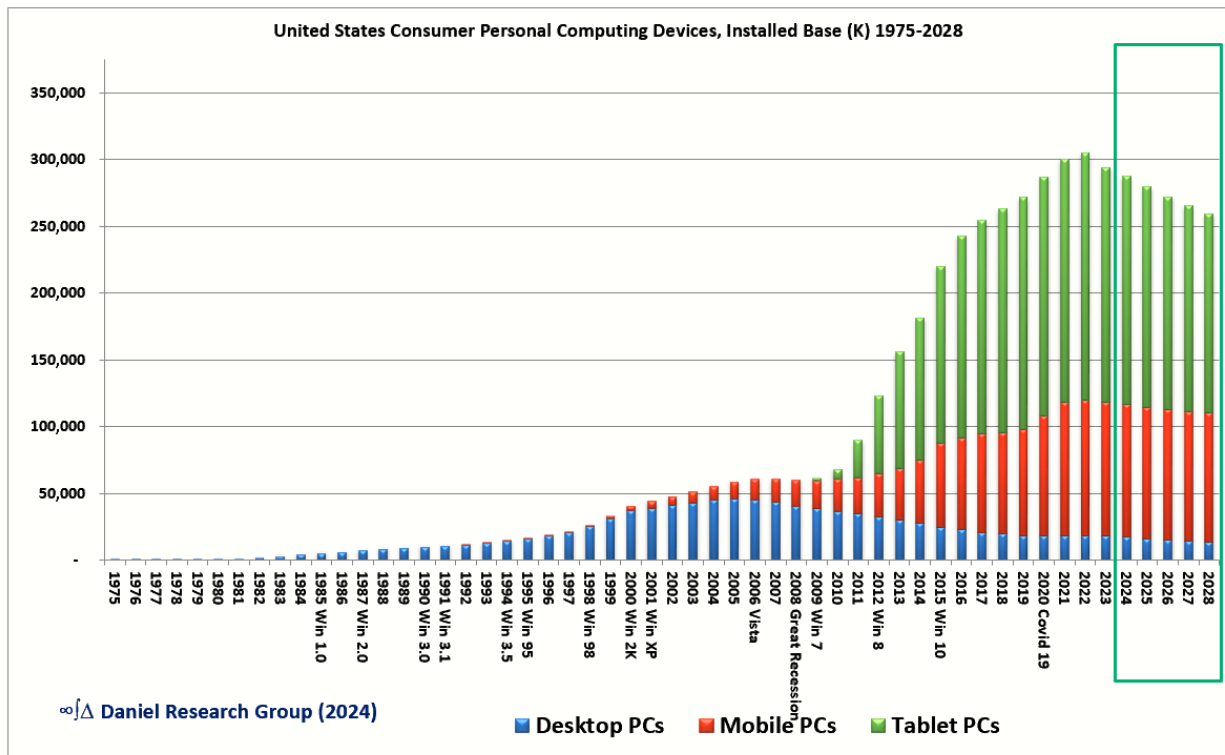
# Mobile Phones



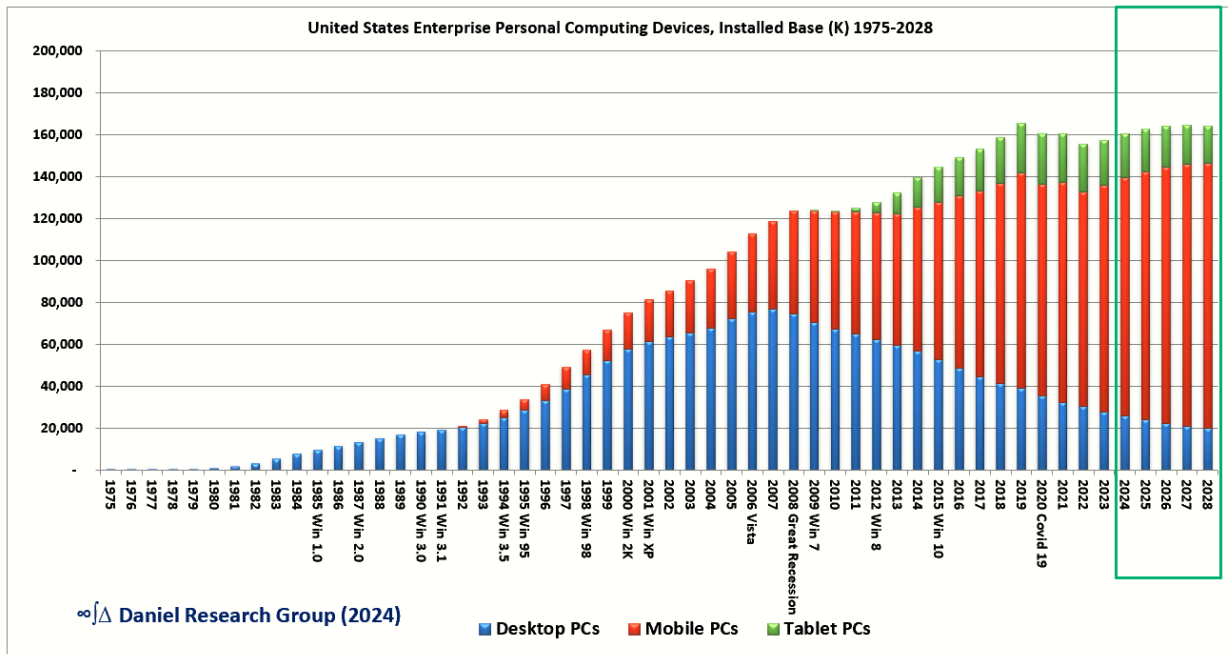
# Installed Base Total



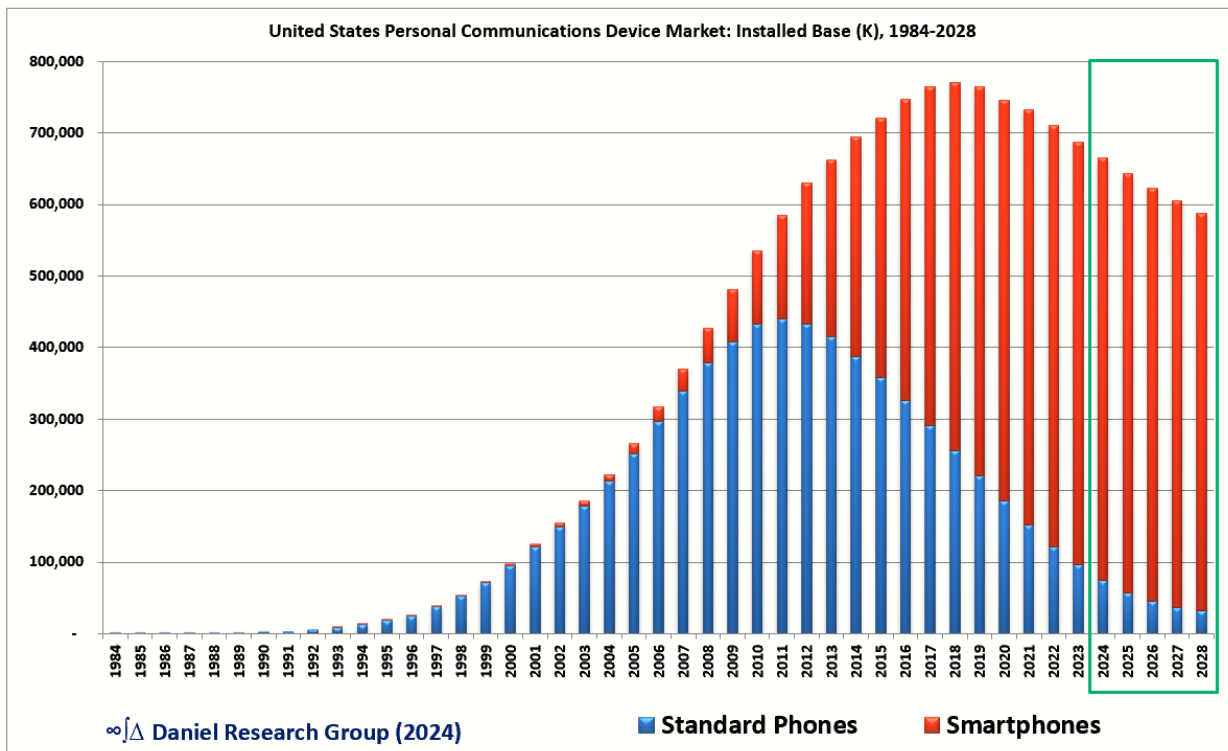
# Consumer



# 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.

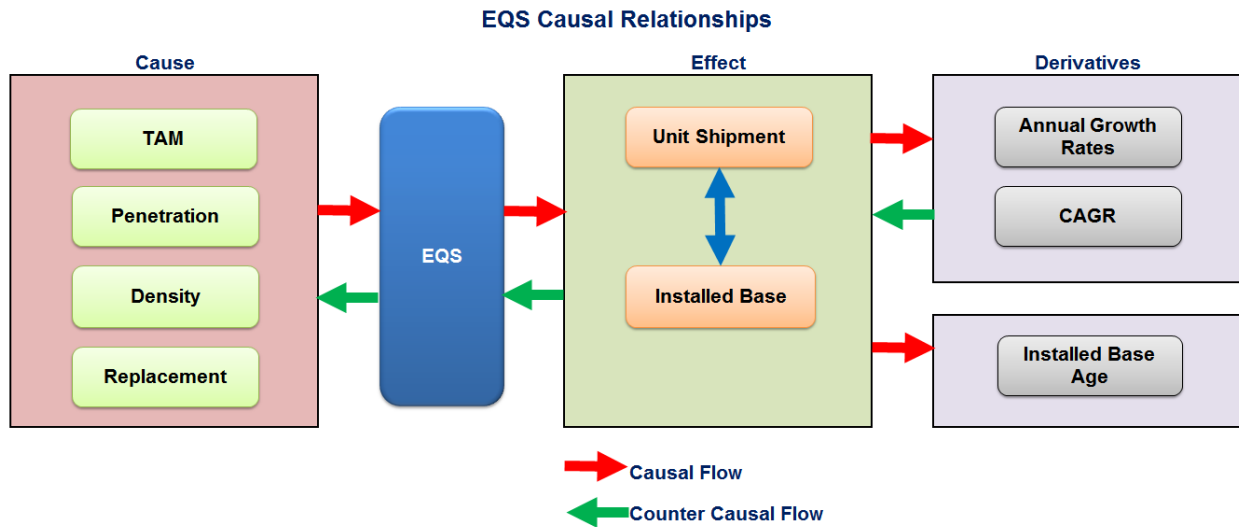
Our forecast approach proceeds in four modeling levels.

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

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