

Results of Operations

We have organized our operations into three segments: North America, International, and AWS. These segments reflect the way the Company evaluates its business performance and manages its operations. See Item 8 of Part II, “Financial Statements and Supplementary Data — Note 10 — Segment Information.”

Overview

Macroeconomic factors, including inflation, increased interest rates, significant capital market and supply chain volatility, and global economic and geopolitical developments, have direct and indirect impacts on our results of operations that are difficult to isolate and quantify. In addition, changes in fuel, utility, and food costs, interest rates, and economic outlook may impact customer demand and our ability to forecast consumer spending patterns. We also expect the current macroeconomic environment and enterprise customer cost optimization efforts to impact our AWS revenue growth rates. We expect some or all of these factors to continue to impact our operations into Q1 2024.

Net Sales

Net sales include product and service sales. Product sales represent revenue from the sale of products and related shipping fees and digital media content where we record revenue gross. Service sales primarily represent third-party seller fees, which includes commissions and any related fulfillment and shipping fees, AWS sales, advertising services, Amazon Prime membership fees, and certain digital media content subscriptions. Net sales information is as follows (in millions):

	Year Ended December 31,	
	2022	2023
Net Sales:		
North America	\$ 315,880	\$ 352,828
International	118,007	131,200
AWS	80,096	90,757
Consolidated	<u>\$ 513,983</u>	<u>\$ 574,785</u>
Year-over-year Percentage Growth (Decline):		
North America	13 %	12 %
International	(8)	11
AWS	29	13
Consolidated	9	12
Year-over-year Percentage Growth, excluding the effect of foreign exchange rates:		
North America	13 %	12 %
International	4	11
AWS	29	13
Consolidated	13	12
Net Sales Mix:		
North America	61 %	61 %
International	23	23
AWS	16	16
Consolidated	<u>100 %</u>	<u>100 %</u>

Sales increased 12% in 2023, compared to the prior year. Changes in foreign exchange rates reduced net sales by \$71 million in 2023. For a discussion of the effect of foreign exchange rates on sales growth, see “Effect of Foreign Exchange Rates” below.

North America sales increased 12% in 2023, compared to the prior year. The sales growth primarily reflects increased unit sales, primarily by third-party sellers, advertising sales, and subscription services. Increased unit sales were driven largely by our continued focus on price, selection, and convenience for our customers, including from our shipping offers.

International sales increased 11% in 2023, compared to the prior year. The sales growth primarily reflects increased unit sales, primarily by third-party sellers, advertising sales, and subscription services. Increased unit sales were driven largely by our continued focus on price, selection, and convenience for our customers, including from our shipping offers. Changes in foreign exchange rates increased International net sales by \$88 million in 2023.

AWS sales increased 13% in 2023, compared to the prior year. The sales growth primarily reflects increased customer usage, partially offset by pricing changes, primarily driven by long-term customer contracts.

Operating Income (Loss)

Operating income (loss) by segment is as follows (in millions):

	Year Ended December 31,	
	2022	2023
Operating Income (Loss)		
North America	\$ (2,847)	\$ 14,877
International	(7,746)	(2,656)
AWS	22,841	24,631
Consolidated	\$ 12,248	\$ 36,852

Operating income was \$12.2 billion and \$36.9 billion for 2022 and 2023. We believe that operating income is a more meaningful measure than gross profit and gross margin due to the diversity of our product categories and services.

The North America operating income in 2023, as compared to the operating loss in the prior year, is primarily due to increased unit sales and increased advertising sales, partially offset by increased shipping and fulfillment costs and increased technology and infrastructure costs.

The decrease in International operating loss in absolute dollars in 2023, compared to the prior year, is primarily due to increased unit sales and increased advertising sales, partially offset by increased fulfillment and shipping costs and increased technology and infrastructure costs. Changes in foreign exchange rates positively impacted operating loss by \$246 million in 2023.

The increase in AWS operating income in absolute dollars in 2023, compared to the prior year, is primarily due to increased sales, partially offset by increased payroll and related expenses and spending on technology infrastructure, both of which were primarily driven by additional investments to support AWS business growth. Changes in foreign exchange rates positively impacted operating income by \$220 million in 2023.

Operating Expenses

Information about operating expenses is as follows (in millions):

	Year Ended December 31,	
	2022	2023
Operating Expenses:		
Cost of sales	\$ 288,831	\$ 304,739
Fulfillment	84,299	90,619
Technology and infrastructure	73,213	85,622
Sales and marketing	42,238	44,370
General and administrative	11,891	11,816
Other operating expense (income), net	1,263	767
Total operating expenses	<u>\$ 501,735</u>	<u>\$ 537,933</u>
Year-over-year Percentage Growth (Decline):		
Cost of sales	6 %	6 %
Fulfillment	12	7
Technology and infrastructure	31	17
Sales and marketing	30	5
General and administrative	35	(1)
Other operating expense (income), net	1,936	(39)
Percent of Net Sales:		
Cost of sales	56.2 %	53.0 %
Fulfillment	16.4	15.8
Technology and infrastructure	14.2	14.9
Sales and marketing	8.2	7.7
General and administrative	2.3	2.1
Other operating expense (income), net	0.2	0.1

Cost of Sales

Cost of sales primarily consists of the purchase price of consumer products, inbound and outbound shipping costs, including costs related to sortation and delivery centers and where we are the transportation service provider, and digital media content costs where we record revenue gross, including video and music.

The increase in cost of sales in absolute dollars in 2023, compared to the prior year, is primarily due to increased product and shipping costs resulting from increased sales, partially offset by fulfillment network efficiencies and lower transportation rates. Changes in foreign exchange rates reduced cost of sales by \$254 million in 2023.

Shipping costs were \$83.5 billion and \$89.5 billion in 2022 and 2023. Shipping costs to receive products from our suppliers are included in our inventory and recognized as cost of sales upon sale of products to our customers. We expect our cost of shipping to continue to increase to the extent our customers accept and use our shipping offers at an increasing rate, we use more expensive shipping methods, and we offer additional services. We seek to mitigate costs of shipping over time in part through achieving higher sales volumes, optimizing our fulfillment network, negotiating better terms with our suppliers, and achieving better operating efficiencies. We believe that offering low prices to our customers is fundamental to our future success, and one way we offer lower prices is through shipping offers.

Costs to operate our AWS segment are primarily classified as “Technology and infrastructure” as we leverage a shared infrastructure that supports both our internal technology requirements and external sales to AWS customers.

Fulfillment

Fulfillment costs primarily consist of those costs incurred in operating and staffing our North America and International fulfillment centers, physical stores, and customer service centers and payment processing costs. While AWS payment processing and related transaction costs are included in “Fulfillment,” AWS costs are primarily classified as “Technology and infrastructure.” Fulfillment costs as a percentage of net sales may vary due to several factors, such as payment processing and related transaction costs, our level of productivity and accuracy, changes in volume, size, and weight of units received and