

Upon completion of the annual testing as of May 1, 2015, our previous Phone Hardware reporting unit goodwill was determined to be impaired. In the second half of fiscal year 2015, Phone Hardware did not meet its sales volume and revenue goals, and the mix of units sold had lower margins than planned. These results, along with changes in the competitive marketplace and an evaluation of business priorities, led to a shift in strategic direction and reduced future revenue and profitability expectations for the business. As a result of these changes in strategy and expectations, we forecasted reductions in unit volume growth rates and lower future cash flows used to estimate the fair value of the Phone Hardware reporting unit, which resulted in the determination that an impairment adjustment was required.

Because our annual test indicated that Phone Hardware's carrying value exceeded its estimated fair value, Step 2 of the goodwill impairment test was performed specific to Phone Hardware. Under Step 2, the fair value of all Phone Hardware assets and liabilities were estimated, including tangible assets, existing technology, patent agreements, and contractual arrangements, for the purpose of deriving an estimate of the implied fair value of goodwill. The implied fair value of the goodwill was then compared to the recorded goodwill to determine the amount of the impairment. Assumptions used in measuring the value of these assets and liabilities included the discount rates and royalty rates used in valuing the intangible assets, and consideration of the market environment in valuing the tangible assets.

NOTE 11 — INTANGIBLE ASSETS

The components of intangible assets, all of which are finite-lived, were as follows:

(In millions)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
June 30,			2017			2016
Technology-based ^(a)	\$ 7,765	\$ (4,318)	\$ 3,447	\$ 5,970	\$ (3,648)	\$ 2,322
Marketing-related	4,016	(829)	3,187	1,869	(616)	1,253
Contract-based	841	(722)	119	796	(718)	78
Customer-related	4,045	(692)	3,353	465	(385)	80
Total	<u>\$ 16,667 ^(b)</u>	<u>\$ (6,561)</u>	<u>\$ 10,106</u>	<u>\$ 9,100</u>	<u>\$ (5,367)</u>	<u>\$ 3,733</u>

(a) Technology-based intangible assets included \$59 million and \$115 million of net carrying amount of software to be sold, leased, or otherwise marketed as of June 30, 2017 and 2016, respectively.

(b) Includes intangible assets related to LinkedIn and other additions. See Note 9 – Business Combinations for further information.

No material impairments of intangible assets were identified during fiscal year 2017.

During fiscal year 2016, we recorded impairment charges of \$480 million related to intangible assets in the Devices reporting unit within our More Personal Computing segment. In the fourth quarter of fiscal year 2016, we tested these intangible assets for recoverability due to changes in facts and circumstances associated with the shift in strategic direction and reduced profitability expectations for our phone business. Based on the results of our testing, we determined that the carrying value of the intangible assets was not recoverable, and an impairment charge was recorded to the extent that estimated fair value exceeded carrying value. We primarily used the income approach to determine the fair value of the intangible assets and determine the amount of impairment.

During fiscal year 2015, we recorded impairment charges of \$2.2 billion related to intangible assets in our previous Phone Hardware reporting unit. Phone Hardware intangible assets are included in the Devices reporting unit under our current segment structure. In the fourth quarter of fiscal year 2015, we tested these intangible assets for recoverability due to changes in facts and circumstances associated with the shift in strategic direction and reduced profitability expectations for Phone Hardware. Based on the results of our testing, we determined that the carrying value of the intangible assets was not recoverable, and an impairment charge was recorded to the extent that estimated fair value exceeded carrying value. We primarily used a relief from royalty income approach to determine the fair value of the intangible assets and determine the amount of impairment.