

Management Discussion

International Business Machines Corporation and Subsidiary Companies

Total expense and other (income) increased 2.8 percent in 2019 versus the prior year primarily driven by higher spending including Red Hat operational spending and investments in software and systems innovation, higher interest expense, non-operating acquisition-related activity associated with the Red Hat transaction and lower IP income, partially offset by lower non-operating retirement-related costs, divestiture-related activity (gains on divestitures and lower spending) and the effects of currency. Total operating (non-GAAP) expense and other (income) increased 4.1 percent year to year, driven primarily by the factors above excluding the higher non-operating acquisition related activity and lower non-operating retirement-related costs described above.

For additional information regarding total expense and other (income) for both expense presentations, see the following analyses by category.

Selling, General and Administrative Expense

(\$ in millions)

For the year ended December 31:	2019	2018	Yr.-to-Yr. Percent Change
Selling, general and administrative expense			
Selling, general and administrative—other	\$17,099	\$16,438	4.0%
Advertising and promotional expense	1,647	1,466	12.3
Workforce rebalancing charges	555	598	(7.2)
Amortization of acquired intangible assets	762	435	74.9
Stock-based compensation	453	361	25.2
Bad debt expense	89	67	32.5
Total consolidated selling, general and administrative expense	\$20,604	\$19,366	6.4%
Non-operating adjustments			
Amortization of acquired intangible assets	(762)	(435)	74.9
Acquisition-related charges	(282)	(15)	NM
Operating (non-GAAP) selling, general and administrative expense	\$19,560	\$18,915	3.4%

NM—Not meaningful

Total selling, general and administrative (SG&A) expense increased 6.4 percent in 2019 versus 2018, driven primarily by the following factors:

- Higher spending (5 points) driven by Red Hat spending (5 points); and
- Higher acquisition-related charges and amortization of acquired intangible assets associated with the Red Hat acquisition (3 points); partially offset by
- The effects of currency (2 points).

Operating (non-GAAP) expense increased 3.4 percent year to year primarily driven by the same factors excluding the acquisition-related charges and amortization of acquired intangible assets associated with the Red Hat transaction.

Bad debt expense increased \$22 million in 2019 compared to 2018. The receivables provision coverage was 1.7 percent at December 31, 2019, an increase of 10 basis points from December 31, 2018.

Research, Development and Engineering Expense

(\$ in millions)

For the year ended December 31:	2019	2018	Yr.-to-Yr. Percent Change
Total consolidated research, development and engineering	\$5,989	\$5,379	11.3%
Non-operating adjustment			
Acquisition-related charges	(53)	—	NM
Operating (non-GAAP) research, development and engineering	\$5,936	\$5,379	10.4%

NM—Not meaningful

Research, development and engineering (RD&E) expense was 7.8 percent of revenue in 2019 and 6.8 percent of revenue in 2018.

RD&E expense increased 11.3 percent in 2019 versus 2018 primarily driven by:

- Higher spending (11 points) including investment in the z15 and Red Hat spending in the second half of 2019 (8 points); and
- Higher acquisition-related charges associated with the Red Hat transaction (1 point); partially offset by
- The effects of currency (1 point).

Operating (non-GAAP) expense increased 10.4 percent year to year primarily driven by the same factors excluding the acquisition-related charges associated with the Red Hat transaction.

Intellectual Property and Custom Development Income

(\$ in millions)

For the year ended December 31:	2019	2018	Yr.-to-Yr. Percent Change
Licensing of intellectual property including royalty-based fees	\$367	\$ 723	(49.2)%
Custom development income	246	275	(10.5)
Sales/other transfers of intellectual property	34	28	22.6
Total	\$648	\$1,026	(36.9)%

Licensing of intellectual property including royalty-based fees decreased 49.2 percent in 2019 compared to 2018. This was primarily due to a decline in new partnership agreements compared to the prior year. The timing and amount of licensing, sales or other transfers of IP may vary significantly from period to period depending upon the timing of licensing agreements, economic conditions, industry consolidation and the timing of new patents and know-how development.