

[Table of Contents](#)**Management Discussion**

31

International Business Machines Corporation and Subsidiary Companies

Cognitive Applications revenue of \$5,290 million decreased 3.0 percent as reported (3 percent adjusted for currency) compared to the prior year. We had good client adoption in security solutions such as Cloud Pak for Security and growth in security services as clients focused on their secure digital transformations. This growth was offset by declines in solutions used by some of the more impacted industries in the current macroeconomic environment, where clients deferred transformational investments to focus on their core operations.

Transaction Processing Platforms revenue of \$6,606 million decreased 16.8 percent as reported (17 percent adjusted for currency) in 2020 compared to the prior year. With the macroeconomic environment due to the COVID-19 pandemic, clients focused on near-term priorities resulting in purchase deferrals, which impacted our transactional software performance in 2020. However, our subscription and support revenue grew in 2020 compared to the prior year.

Within Cloud & Cognitive Software, cloud revenue of \$7.0 billion grew 67 percent as reported and adjusted for currency year to year.

(\$ in millions)

			Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:	2020	2019 *	
Cloud & Cognitive Software			
External gross profit	\$18,118	\$17,650	2.7 %
External gross profit margin	77.5 %	77.1 %	0.4 pts.
Pre-tax income	\$ 6,362	\$ 7,811	(18.5)%
Pre-tax margin	24.0 %	30.4 %	(6.4)pts.

* Recast to reflect segment changes.

The Cloud & Cognitive Software gross profit margin increased 0.4 points to 77.5 percent in 2020 compared to the prior year. The gross profit margin expansion was driven primarily by the full-year contribution from Red Hat and year-to-year improvement in services margins as we continued to focus on shifting to higher value services, such as Software-as-a-Service and security services, and driving AI-powered automation across the portfolio. Pre-tax income of \$6,362 million decreased 18.5 percent compared to the prior year with a pre-tax margin decline of 6.4 points to 24.0 percent. The decline in pre-tax income and margin was driven primarily by the revenue decline in Transaction Processing Platforms, our continued investment in our strategic areas of cloud and AI, and the impact of higher workforce rebalancing charges year-to-year which had 2.6 points of impact on the pre-tax margin.

Global Business Services

(\$ in millions)

			Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency
For the year ended December 31:	2020	2019		
Global Business Services external revenue	\$16,162	\$16,798 *	(3.8)%	(4.1)%
Consulting	\$ 8,083	\$ 8,157 *	(0.9)%	(1.3)%
Application Management	7,133	7,646	(6.7)	(6.9)
Global Process Services	945	995	(5.0)	(4.7)

* Recast to reflect segment changes.

GBS revenue of \$16,162 million decreased 3.8 percent as reported (4 percent adjusted for currency) in 2020 compared to the prior year. As the global pandemic intensified through the year, we aligned our offerings to help clients focus on engaging customers virtually, modernizing and migrating applications to the cloud, empowering a remote workforce, and focusing on cybersecurity and IT resiliency. In 2020, GBS accelerated the number of engagements using Red Hat technology and continued to drive client adoption of Red Hat OpenShift and IBM Cloud Paks.

Consulting revenue of \$8,083 million decreased 0.9 percent as reported (1 percent adjusted for currency) compared to the prior year. Given the macroeconomic environment during 2020, clients shifted priorities, which led to project delays and less demand for more discretionary offerings. As we pivoted our offerings and capabilities to help address clients' priorities around application