

## Management Discussion

International Business Machines Corporation and Subsidiary Companies

Cloud & Cognitive Software revenue increased in 2018 compared to the prior year with growth in all three lines of business, as reported and adjusted for currency. Within Cognitive Applications, the increase was driven by strong double-digit growth in security services, while growth in Cloud & Data Platforms was led by analytics platforms and integration offerings. Transaction Processing Platforms grew with improved revenue performance sequentially in the fourth-quarter 2018 versus the third-quarter 2018 reflecting clients' commitment to the company's platform for the long term and the value it provides in managing mission-critical workloads. Within Cloud & Cognitive Software, cloud revenue of \$3.0 billion grew 10 percent as reported and adjusted for currency compared to the prior year.

(\$ in millions)

For the year ended December 31:	2018*	2017*	Yr.-to-Yr. Percent/ Margin Change
<b>Cloud &amp; Cognitive Software</b>			
External gross profit	\$17,224	\$16,986	1.4%
External gross profit margin	77.6%	78.1%	(0.5) pts.
Pre-tax income	\$ 8,882	\$ 8,068	10.1%
Pre-tax margin	35.0%	32.4%	2.6 pts.

\* Recast to reflect segment changes.

Gross margin in Cloud & Cognitive Software was impacted by an increased mix toward SaaS, a mix toward security services and increased royalty costs associated with IP licensing agreements compared to the prior year. Pre-tax income improvement year to year was primarily driven by operational efficiencies and mix.

## Global Business Services

(\$ in millions)

For the year ended December 31:	2018	2017	Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency
<b>Global Business Services external revenue</b>	\$16,595*	\$16,073*	3.2%	2.3%
Consulting	\$ 7,705	\$ 7,262	6.1%	5.1%
Application Management	7,852	7,821	0.4	(0.5)
Global Process Services	1,037*	990*	4.8	4.7

\* Recast to reflect segment changes.

Global Business Services revenue increased compared to 2017 driven by strong growth in Consulting, led by key offerings in digital and cloud application, where the business has brought together technology and industry expertise to help clients on their digital journey. GPS grew year to year, while Application Management revenue was flat as reported and declined adjusted for currency compared to 2017. While we continued to help clients move to the cloud with offerings such as Cloud Migration Factory and cloud application development, there were continued declines in the more traditional application management engagements. Within GBS, cloud revenue of \$4.7 billion grew 20 percent as reported and 19 percent adjusted for currency compared to the prior year.

(\$ in millions)

For the year ended December 31:	2018*	2017*	Yr.-to-Yr. Percent/ Margin Change
<b>Global Business Services</b>			
External gross profit	\$4,448	\$4,033	10.3%
External gross profit margin	26.8%	25.1%	1.7 pts.
Pre-tax income	\$1,629	\$1,303	25.0%
Pre-tax margin	9.6%	7.9%	1.7 pts.

\* Recast to reflect segment changes.

The year-to-year improvements in margins and pre-tax income in GBS were the result of the shift to higher-value offerings, realignment of resources to key skill areas, increased productivity and utilization as well as a benefit from currency, due to the company's global delivery model.