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Management Discussion

International Business Machines Corporation and Subsidiary Companies

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(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent/ Margin Change
For the year ended December 31:			
Global Technology Services			
External total gross profit	\$8,975	\$9,515	(5.7)%
External total gross profit margin	34.8 %	34.8 %	0.0 pts.
Pre-tax income	\$ 117	\$1,645	(92.9)%
Pre-tax margin	0.4 %	5.8 %	(5.3)pts.

The GTS gross profit margin of 34.8 percent was flat compared to the prior year. We had margin improvement across the portfolio from the benefits of workforce rebalancing actions taken earlier in the year and from the shift to higher-value business, partially offset by revenue declines in TSS. Pre-tax income of \$117 million decreased 92.9 percent and pre-tax margin decreased 5.3 points year to year to 0.4 percent, reflecting the higher level of workforce rebalancing charges in the current year, which had 4.2 points of impact on the pre-tax margin. A significant portion of the structural actions in the fourth quarter of 2020 impacted GTS in order to further improve margins and the overall financial profile of the business.

Services Backlog and Signings

(\$ in billions)

	2020	2019	Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency
At December 31:				
Total backlog	\$110.8	\$112.4	(1.5)%	(4.5)%

The estimated total services backlog at December 31, 2020 was \$111 billion, a decrease of 1.5 percent as reported (4 percent adjusted for currency).

Total services backlog includes Infrastructure & Cloud Services, Security Services, Consulting, Global Process Services, Application Management and TSS. Total backlog is intended to be a statement of overall work under contract which is either noncancellable, or which historically has very low likelihood of termination, given the criticality of certain services to the company's clients. Total backlog does not include as-a-Service arrangements that allow for termination under contractual commitment terms. Backlog estimates are subject to change and are affected by several factors, including terminations, changes in the scope of contracts, periodic revalidations, adjustments for revenue not materialized and adjustments for currency.

(\$ in millions)

	2020	2019	Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency
For the year ended December 31:				
Total signings	\$38,770	\$40,741	(4.8)%	(5.1)%

Services signings are management's initial estimate of the value of a client's commitment under a services contract. There are no third-party standards or requirements governing the calculation of signings. The calculation used by management involves estimates and judgments to gauge the extent of a client's commitment, including the type and duration of the agreement, and the presence of termination charges or wind-down costs.

Signings include Infrastructure & Cloud Services, Security Services, Consulting, Global Process Services and Application Management contracts. Contract extensions and increases in scope are treated as signings only to the extent of the incremental new value. Total services signings can vary over time due to a variety of factors including, but not limited to, the timing of signing a small number of larger contracts, such as in Infrastructure & Cloud Services or Global Process Services. TSS is generally not included in signings as the maintenance contracts tend to be more steady state, where revenues equal