($ in millions)

| For the year ended December 31: | 2019 | 2018* | Yr.-to-Yr. Percent/ Margin Change |
|---|---|---|---|
| **Global Business Services** | | | |
| External gross profit | $4,606 | $4,448 | 3.5% |
| External gross profit margin | 27.7% | 26.8% | 0.9 pts. |
| Pre-tax income | $1,666 | $1,629 | 2.2% |
| Pre-tax margin | 9.9% | 9.6% | 0.2 pts. |

* Recast to reflect segment changes.

The GBS profit margin increased 0.9 points to 27.7 percent and pre-tax income of $1,666 million increased 2.2 percent year to year. The pre-tax margin of 9.9 percent increased slightly year to year. The year-to-year improvements in margins and pre-tax income were driven by the continued mix shift to higher-value offerings, the yield from delivery productivity improvements and a currency benefit from leveraging the global delivery resource model. We continued to invest in our services offerings and skills necessary to assist our clients on their cloud journey.

## Global Technology Services

($ in millions)

| For the year ended December 31: | 2019 | 2018 | Yr.-to-Yr. Percent Change | Yr.-to-Yr. Percent Change Adjusted for Currency |
|---|---|---|---|---|
| **Global Technology Services external revenue** | $27,361 | $29,146* | (6.1)% | (3.7)% |
| Infrastructure & Cloud Services | $20,736 | $22,185* | (6.5)% | (4.1)% |
| Technology Support Services | 6,625 | 6,961 | (4.8) | (2.2) |

* Recast to reflect segment changes.

GTS revenue of $27,361 million decreased 6.1 percent as reported (4 percent adjusted for currency) in 2019 compared to the prior year. We had continued growth in cloud services that help clients move and manage workloads. However, performance reflected lower client business volumes in more traditional labor-based managed services. We continue to take actions to accelerate the shift to higher-value segments of the market and are introducing new managed services offerings for public and private cloud, in areas like cybersecurity, data management and hybrid orchestration. We are investing in joint services offerings integrating GTS and GBS, and deploying joint go-to-market capabilities, as clients demand solutions that merge applications and infrastructure. Although lower business volumes impacted full-year revenue and profit in 2019, we ended the year with growth in cloud signings and a solid pipeline of future deals that will deliver productivity to our clients.

Infrastructure & Cloud Services revenue of $20,736 million decreased 6.5 percent as reported (4 percent adjusted for currency) compared to the prior year. Revenue was impacted by our customers' own business volumes which were lower year to year in certain offerings. Clients are modernizing their core infrastructures to hybrid multi-cloud infrastructures. GTS is continuing to invest in cloud capabilities, introduce new managed services offerings and build out its cloud data center footprint to capture this opportunity. Growth in cloud signings reflects our re-alignment of GTS offerings to help our clients on their journey to cloud, infusing offerings with IP and leveraging Red Hat's capabilities.

Technology Support Services (TSS) revenue of $6,625 million decreased 4.8 percent as reported (2 percent adjusted for currency) in 2019, partially driven by dynamics in the hardware product cycles.

Within GTS, cloud revenue of $8.6 billion grew 8 percent as reported and 10 percent adjusted for currency.

($ in millions)

| For the year ended December 31: | 2019 | 2018* | Yr.-to-Yr. Percent/ Margin Change |
|---|---|---|---|
| **Global Technology Services** | | | |
| External total gross profit | $9,515 | $10,035 | (5.2)% |
| External total gross profit margin | 34.8% | 34.4% | 0.3 pts. |
| Pre-tax income | $1,645 | $ 1,781 | (7.6)% |
| Pre-tax margin | 5.8% | 5.9% | (0.2)pts. |

* Recast to reflect segment changes.

The GTS gross profit margin increased 0.3 points year to year to 34.8 percent, due to the benefits of workforce actions and the continued scale out of our public cloud. We continued to take structural actions to improve our cost competitiveness and are accelerating the use of AI and automation in delivery operations, including leveraging Red Hat's Ansible platform. Pre-tax income of $1,645 million decreased 7.6 percent, driven primarily by the decline in revenue and gross profit, and a higher level of workforce rebalancing charges in the current year. Pre-tax margin of 5.8 percent was essentially flat year to year, with the 2019 pre-tax margin reflecting benefits from structural and workforce actions.