

## Management Discussion

International Business Machines Corporation and Subsidiary Companies

adjusted for currency) led by double-digit growth in OpenShift and Ansible, both of which gained market share in 2022. OpenShift had \$1.0 billion in annual recurring revenue exiting 2022. Revenue in RHEL also had strong growth and gained share in 2022 compared to the prior year. Red Hat continues to be a leader in open-source technology and its hybrid cloud offerings continue to transform enterprise IT. Automation revenue increased 2.1 percent as reported (7 percent adjusted for currency), led by Integration and AIOps and Management as clients look to automate business workflows and improve applications. Data & AI revenue increased 1.5 percent as reported (6 percent adjusted for currency), reflecting demand in areas such as Data Management, Data Fabric, Information Exchange, and Asset and Supply Chain Management. In addition, our offerings such as Envizi and Environmental Intelligence Suite are resonating with clients as they continue to prioritize sustainability efforts. Security revenue increased 2.2 percent as reported (7 percent adjusted for currency), led by strength across our offerings such as Threat Management, Data Security and Identity. We continue to help clients detect, prevent and respond to security incidents as they adopt zero-trust security strategies.

Across Hybrid Platform & Solutions, our annual recurring revenue (ARR) was \$13.3 billion exiting 2022. ARR is a key performance metric management uses to assess the health and growth trajectory of our Hybrid Platform & Solutions business within the Software segment. ARR is calculated by estimating the current quarter's recurring, committed value for certain types of active contracts as of the period-end date and then multiplying that value by four. This value is based on each arrangement's contract value and start date, mitigating fluctuations during the contract term, and includes the following consumption models: (1) software subscription agreements, including committed term licenses, (2) as-a-service arrangements such as SaaS and PaaS, (3) maintenance and support contracts, and (4) security managed services contracts. ARR should be viewed independently of revenue as this performance metric and its inputs may not represent the amount of revenue recognized in the period and therefore is not intended to represent current period revenue or revenue that will be recognized in future periods. ARR is calculated at estimated constant currency.

Transaction Processing revenue of \$7,171 million increased 12.2 percent as reported (19 percent adjusted for currency) in 2022 compared to the prior year. This includes incremental sales to Kyndryl which contributed approximately 19 points of revenue growth in 2022. Client demand for this mission-critical software has followed increases in zSystems installed capacity over the last two product cycles and consistently strong renewal rates during 2022 are evidence of the importance of this software in a hybrid cloud environment.

(\$ in millions)

	2022	2021 *	Yr.-to-Yr. Percent/ Margin Change
<b>For the year ended December 31:</b>			
<b>Software</b>			
Gross profit	\$19,941	\$18,648	6.9 %
Gross profit margin	79.6 %	79.6 %	0.0 pts.
Pre-tax income	\$ 6,162	\$ 4,849	27.1 %
Pre-tax margin	24.6 %	20.7 %	3.9 pts.

\* Recast to reflect segment change.

The Software gross profit margin of 79.6 percent in 2022 was flat compared to the prior year. Pre-tax income of \$6,162 million increased 27.1 percent compared to the prior year with a pre-tax margin expansion of 3.9 points to 24.6 percent. The improvements year to year in pre-tax income and pre-tax margin were driven primarily by the higher gross profit contribution from our strong revenue growth including the Kyndryl commercial relationship, which reflects the demand for our products, as well as portfolio mix.

## Consulting

(\$ in millions)

	2022	2021	Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency
<b>For the year ended December 31:</b>				
<b>Consulting revenue</b>				
Business Transformation	\$ 19,107	\$ 17,844	7.1 %	14.9 %
Technology Consulting	8,834	8,284	6.6 %	14.0 %
	3,765	3,466	8.6	16.8
Application Operations	6,508	6,095	6.8	15.0

Consulting revenue of \$19,107 million increased 7.1 percent as reported (15 percent adjusted for currency) in 2022 compared to the prior year, with strong growth across all three business areas. Clients are leveraging IBM's hybrid cloud leadership and deep industry expertise to navigate the complexity of their digital transformation journeys. Strong demand for our Consulting offerings led to signings growth of 6.9 percent as reported (14 percent adjusted for currency) in 2022. We had our best quarterly book-to-bill for 2022 in the fourth quarter and had a book-to-bill ratio of 1.1 for the year. Book-to-bill represents the ratio of IBM Consulting signings to its revenue over the same period and is a useful indicator of the demand for our business over time. Clients are partnering with IBM Consulting as they decide which applications to modernize and how to migrate these applications across hybrid, multi-cloud environments. Within Consulting, hybrid cloud revenue of \$9,019 million grew 15 percent as reported (23 percent adjusted for currency) year to year with both our Red Hat practice and strategic partnerships contributing to the growth.