

GAAP Measures to Non-GAAP Measures: the Boeing Company's Financial Statements 2016 - 2018

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The purpose of this paper is to synthesise insights from existing research on the disclosure of the GAAP measures to NonGAAP measures, from an international point of view, and suggest several avenues for future research in this area, especially in the aircraft industry. Methodology approach - in conjunction with the analysis of existing research, the paper examines how different regulators and accounting standard setters have approached the topic of non-GAAP measures disclosure. The paper shows the results of how GAAP measures have been found to be more informative than NonGAAP measures in several scenarios. The Boeing Company, where GAAP measures and NonGAAP measures are compulsory, in the aircraft industry where these measures are voluntary but regulated and companies where they are not regulated. However, in certain circumstances, these measures may also mislead investors. Corporate governance mechanisms can curb managers' opportunistic use of these measures.

Keywords: *GAAP measures, non-GAAP measures, pro forma earnings, alternative performance measures, accounting standards*

Introduction

Program accounting requires the demonstrated ability to reliably estimate the relationship of sales to costs for the defined program accounting quantity. A program consists of the estimated number of units (accounting quantity) of a product to be produced in a continuing, long-term production effort for delivery under existing and anticipated contracts. The determination of the accounting quantity is limited by the ability to make reasonably dependable estimates of the revenue and cost of existing and anticipated contracts. For each program, the amount reported as cost of sales is determined by applying the estimated cost of sales percentage for the total remaining program to the number of sales recognised for aeroplanes delivered and accepted by the customer (Sendw et al., 2019).

Absorption costing involves assigning a standard overhead rate that is included when calculating manufacturing overhead costs. This cost rate is applied to the total units of inventory that is produced during a specific time period. As inventory is produced, the depreciation of the operating assets used to manufacture inventory items is transferred from an overhead manufacturing account into the work-in-process inventory. As the work-in-process inventory is completed and sold, a proportional amount of the depreciation expense is then transferred to the finished goods inventory and ultimately to the cost of goods sold (Jesswein, 2017).

The Boeing Company, together with its subsidiaries, is one of the world's major aerospace firms. Boeing is organised based on the products and services the company offers. Boeing operates in four reportable segments: Commercial Airplanes (BCA); Defense, Space & Security (BDS); Global Services (BGS); and Boeing Capital (BCC) (Zarin & Gaskari, 2016).

It is usual for manufacturers to enter into long-term construction contracts to produce a given number of units of an item. The Accounting Standards Codification (ASC) identifies specific characteristics common to contractor accounting, including a contract entered into between the contractor and a customer that may expose the contractor to significant performance risk [ASC 910-10-15-4(c)]. The costs and revenues are accounted for on the specific contract basis [ASC 910-10-14-4(e)]. These contracts can be categorised into one of four types: fixed-price, unit-price, cost-plus, or time-and-materials [ASC 910-10-14-4(f)]. Generally Accepted Accounting Principles (GAAP) typically allows either the percentage of completion or the completed contract method for income recognition purposes on long-term construction type contracts (ASC 605-35-05-5) (Gray et al., 2016).

Factors that must be estimated include program accounting quantity, sales price, labour and employee benefit costs, material costs, procured part costs, significant component costs, overhead costs, program tooling and other non-recurring costs, and warranty costs. Estimation of the accounting quantity for each program takes into account several factors that are indicative of the demand for the particular program, such as firm orders, letters of intent from prospective customers, and market studies. Total estimated program sales are determined by estimating the model mix and sales price for all unsold units within the accounting quantity, added together with the sales prices for all undelivered units under contract.

The sales prices for all undelivered units within the accounting quantity include an escalation adjustment for inflation that is updated quarterly. Cost estimates are based mostly on negotiated and anticipated contracts with suppliers, historical performance trends, and business base and other economic projections. Factors that influence these estimates include

production rates, internal and subcontractor performance trends, customer and/or supplier claims or assertions, asset utilisation, anticipated labour agreements, and inflationary or deflationary trends.

To ensure reliability in the company's estimates, Boeing employs a rigorous estimating process that is reviewed and updated on a quarterly basis. Changes in estimates are typically recognised on a prospective basis; however, when estimated costs to complete a program exceed estimated revenues from undelivered units in the accounting quantity, a loss provision is recorded in the current period for the estimated loss on all undelivered units in the accounting quantity. For example, in 2016, Boeing recorded a reach-forward loss of \$1,258 million on the 747 programs.

The program method of accounting allocates tooling and other non-recurring and production costs over the accounting quantity for each program. Because of the higher unit production costs experienced at the beginning of a new program and substantial investment required for initial tooling and other non-recurring costs, new commercial aircraft programs, such as the 787 and 777X programs, typically have lower initial margins than established programs. In addition, actual costs incurred for earlier units over the estimated average cost of all units in the program accounting quantity are included within program inventory as deferred production costs. Deferred production, unamortised tooling and other non-recurring costs are expected to be fully recovered when all units in the accounting quantity are delivered as the expected unit cost for later deliveries are below the estimated average cost as a learning curve, and other improvements are realised.

Due to the significance of judgment in the estimation process described above, it is reasonably possible that changes in underlying circumstances or assumptions could have a material effect on program gross margins. If the combined gross margin percentages for our commercial aeroplane programs had been estimated to be 1% higher or lower, it would have a similar effect on the Commercial Airplane segment's operating margins. For the year ended December 31, 2018, a 1% increase or decrease in operating margins for our Commercial Airplane segment would have a \$607 million impact on operating earnings.

Literature Review

Concept Definition and Theoretical Approach

Generally Accepted Accounting Principles (GAAP) refer to a common set of accepted accounting principles, standards, and procedures that companies and their accountants must follow when they compile their financial statements. GAAP is a combination of authoritative standards (set by policy boards) and the commonly accepted ways of recording and reporting

accounting information. GAAP improves the clarity of the communication of financial information. GAAP may be contrasted with pro forma accounting and with the IFRS standards, which are both considered to be non-GAAP (Kenton, 2019).

Understanding GAAP

GAAP is meant to ensure a minimum level of consistency in a company's financial statements, which makes it easier for investors to analyse and extract useful information. GAAP also facilitates the cross-comparison of financial information across different companies.

These ten general principles as the main mission and direction of the GAAP system.

- 1) Principle of Regularity: The accountant has adhered to GAAP rules and regulations as a standard;
- 2) Principle of Consistency: Professionals commit to applying the same standards throughout the reporting process to prevent errors or discrepancies. Accountants are expected to fully disclose and explain the reasons behind any changed or updated standards;
- 3) Principle of Sincerity: The accountant strives to provide an accurate depiction of a company's financial situation.
- 4) Principle of Permanence of Methods: The procedures used in financial reporting should be consistent;
- 5) Principle of Non-Compensation: Both negatives and positives should be fully reported with transparency and without the expectation of debt compensation;
- 6) Principle of Prudence Emphasising fact-based financial data representation that is not clouded by speculation;
- 7) Principle of Continuity: While valuing assets, it should be assumed the business will continue to operate;
- 8) Principle of Periodicity: Entries should be distributed across the appropriate periods of time. For example, revenue should be divided by its relevant periods;
- 9) Principle of Materiality/Good Faith: Accountants must strive for full disclosure in financial reports; and
- 10) Principle of Utmost Good Faith: Derived from the Latin phrase "*uberrimae fidei*" used within the insurance industry. It presupposes that parties remain honest in transactions.

Compliance

GAAP must be followed when a company distributes its financial statements outside of the company. If a corporation's stock is publicly traded, the financial statements must also adhere to rules established by the U.S. Securities and Exchange Commission (SEC). GAAP covers things such as revenue recognition, balance sheet item classification and outstanding share measurements. If a financial statement is not prepared using GAAP, investors should be

cautious. Also, some companies may use both GAAP and non-GAAP compliant measures when reporting financial results. GAAP regulations require that non-GAAP measures are identified in financial statements and other public disclosures, such as press releases.

The Hierarchy of GAAP

Designed to improve financial reporting, it consists of a framework for selecting the principles that public accountants should use in preparing financial statements in line with U.S. GAAP. At the top of the GAAP hierarchy are statements by the Financial Accounting Standards Board (FASB) and opinions by the American Institute of Certified Public Accountants (AICPA). The next level consists of FASB Technical Bulletins and AICPA Industry Audit and Accounting Guides and Statements of Position. The third level is AICPA Accounting Standards Executive Committee Practice Bulletins and positions of the FASB Emerging Issues Task Force (EITF); also included are Topics discussed in Appendix “D” of EITF Abstracts. The lowest level is FASB implementation guides, AICPA Accounting Interpretations, AICPA Industry Audit and Accounting Guides and Statements of Position not cleared by the FASB. Also included are practices that are widely recognised.

GAAP vs. IFRS

GAAP is focused on the practices of U.S. companies. The Financial Accounting Standards Board (FASB) issues GAAP. The international alternative to GAAP is the International Financial Reporting Standards (IFRS) set by the International Accounting Standards Board (IASB). The IASB and the FASB have been working on the convergence of IFRS and GAAP since 2002. Due to the progress achieved in this partnership, the SEC, in 2007, removed the requirement for non-U.S. companies registered in America to reconcile their financial reports with GAAP if their accounts already complied with IFRS. This was a significant achievement because before the ruling, non-U.S. companies trading on U.S. exchanges had to provide GAAP-compliant financial statements.

Some differences that still exist between both accounting rules include 1) LIFO Inventory - While GAAP allows companies to use the Last In First Out (LIFO) as an inventory cost method, it is prohibited under IFRS; 2) Costs of Development - These costs are to be charged to expense as they are incurred under GAAP. Under IFRS, the costs can be capitalised and amortised over multiple periods; and 3) Write-Downs - GAAP specifies that the amount of write-down of an inventory or fixed asset cannot be reversed if the market value of the asset subsequently increases. The write-down can be reversed under IFRS.

Normative Accounting Theory

A normative accounting theory seeks to prescribe some basis of accounting measurement, particular accounting procedures, and the contents of financial reports (Ijiri, 1975; W&Z, 1986). Ijiri views normative theories as a particular case of deductive theories. Deductive theories that start with some goal assumptions and deduce accounting procedures therefrom are labelled normative theories. Thus, there are two essential elements of a normative theory, including goal assumption and deduction. A theorist may set his own goals that are not inherent to current accounting practice. Chambers (1966) falls in this group. Again, a theorist may inductively derive goals from accounting practice and use those goals to suggest improvements in current practice. Ijiri falls into this group. Such theories are also categorised as normative theory. It is noted that not every theorist is explicit on goal statement. Some state the underlying assumptions and deduce accounting measurement from these (Paton & Littleton, 1940).

So far, three approaches have been employed in normative accounting research. These are inductive model, deductive model and the decision usefulness approach. In induction, a general statement (“X”) is induced from some empirical observations, hypothetical phenomena, or non-empirical concepts (“O”). The implications of “X” include and go beyond “O”. It may be noted that many “X”s may be induced from “O”. The contribution of an inductive model is in coming up with an “X” as an explanation of “O”. On the other hand, the opposite process is followed in deductive models. Here “O” is deduced from “X”. “X” is a set of theories or assumptions that have already been accepted. In a deductive model, “O” is a special case of “X”. In the decision usefulness, decision model approach, ‘information relevant to a decision model or criterion is isolated, and various accounting alternatives are compared to the data presumably necessary for implementing these decision models’ (Brinn et al., 1996)).

Positive Accounting Theory (PAT)

PAT improved the perception of phenomena and different accounting results. For example, the theory created essential insights about the relationship between accounting value and Return on equity and the motivations of management financial reporting. However, its participation in accounting procedures has been very limited. The accounting practices evolution through the interaction between many factors and the process of change in accounting policies has been very slow (Ghanbari et al., 2016).

However, PAT research findings reported important debates about accounting publications. For example, PAT research helped to shape the debate on current fair value. Discussions related to the fair value focused on whether the fair value must be viewed as a measurement

feature in financial statements. The debate about the market value is too old. However, there is current empirical evidence on the positive and negative aspects of fair value.

For example, the literature has demonstrated the fair value of assets is the same as the related value in some standard formulation. On the other hand, such accounting sources have argued that the fair value is a poor measure, especially when recommended models can easily manage them as simple as the estimates of fair value.

PAT literature proves that the managers manage the reported earnings to achieve their reward goals. Recent studies have demonstrated that the management manipulated the estimates of the fair value. For example, Begley & Freedman (2004) prepared evidence of the widespread use of fair value by Enron Co. and argued that the management abuses the fair value, and this caused its destruction.

In addition, the results obtained in PAT has suggested situations in which the managers manage earnings. For example, the earnings are managed when the managers' rewards are based on the reported earnings (Haley, 1985). The companies violate the debt agreements when the current benefit is less than a certain amount, or when the companies have released stock data or when is a change in management. Auditing standards asks the auditor to identify and evaluate the risks of essential distortions in the financial statements. These findings may help to identify conditions that earnings may be manipulated (Kozhabergenova et al., 2018).

Agency Theory

The agency model is considered as one of the oldest theory in the literature of management and economics (Daily, Dalton, & Rajagopalan, 2003; Wasserman, 2006). Agency theory discusses the problems that surface in the firms due to the separation of owners and managers and emphasises on the reduction of this problem. This theory helps in implementing the various governance mechanisms to control the agents' action in the jointly held corporations. Berle and Means (1932), in their thesis, found that the modern corporation of the USA had dispersed ownership, and it leads to the separation of ownership from control. In a joint-stock company, the ownership is held by individuals or groups in the form of stock and these shareholders (principals) delegates the authority to the managers (agents) to run the business on their behalf (Jensen & Meckling, 1976; Ross, 1973), but the major issue is whether these managers are performing for the owners or themselves. (Panda & Leepsa, 2017)

Methodology

Sekaran (2006) defines “research as simply the process of finding solutions to a problem after a thorough study and analysis of the situational factors.” They believe that research can be

helpful in decision making within the organisation. As the difference between good and poor decision-making often lies in its process, well-conducted research can provide knowledge about the various steps concerned to find solutions. Therefore, the method by which research employs can determine the quality of its findings.

“Method” means “a procedure or process for attaining an object: such as a (1): A systematic procedure, technique, or mode of inquiry employed by or proper to a particular discipline or art (2): A systematic plan followed in presenting material for instruction” (Sekaran, 2014). This research employs the exploratory method. Exploratory research questions are typically developed when: (a) Not much is known about a particular phenomenon; (b) existing research results are unclear or suffer from severe limitations; (c) the topic is highly complex, or (d) there is not enough theory available to guide the development of a theoretical framework (Suryana et al., 2013).

Because exploratory research is conducted when a phenomenon is not much known and available theories do not suffice, it is classified as qualitative research. Qualitative research is a type of scientific research (Sekaran, 2014) describe, in general terms, scientific research consists of an investigation that:

- Seeks answers to a question,
- Systematically uses a predefined set of procedures to answer the question,
- Collects evidence,
- Produces findings that were not determined in advance,
- Produces findings that are applicable beyond the immediate boundaries of the study.

Unlike quantitative research, neither exploratory nor descriptive research develops a theoretical framework and tests hypotheses. Qualitative research is also more flexible because its question format is open-ended. Open-ended questions have advantages in term of its richness and exploratory nature; thus, it can evoke unanticipated answer(s) by the researcher.

This study works with qualitative research for its objective is to enhance the knowledge of a phenomenon in its natural context, i.e. the development of cost accounting (Byrne, MM., 2001a; Marais, H., 2012). Qualitative research is a descriptive type of research which provides the researcher with what exists through communicative representations as non-numerical symbolic information, hence facilitate understanding of human beings in their specific social and cultural grounds (Bear-Lehman, 2002; Charkhchi et al., 2011; Marais, 2012). Qualitative research is an umbrella term for methods which do not fit into the quantitative range (Chao, 2013).

The three typical characteristic qualitative research are: (1) non-proof oriented epistemologies. In other words, the research process does not begin with a preconceived hypothesis of the researcher then as information unfolds, inductive reasoning is used to develop hypotheses; (2) the goal is not about generalisability but to comprehend and disclose concept and meaning; and (3) the techniques are not related to numbers, rather context rich and holistic materials are delivered (BearLehman, 2002; Charkhchi et al., 2011). Thereby, the methods are in general less rigid and formalised, however more comprehensive (Marais, 2012).

Results and Discussion

Research Findings and Discussion

Total Costs and Expenses (“Cost of Sales”)

Cost of sales, for both products and services, consists primarily of raw materials, parts, sub-assemblies, labour, overhead and subcontracting costs. Our BCA segment predominantly uses program accounting to account for the cost of sales. Under program accounting, cost of sales for each commercial aeroplane program equals the product of (i) revenue recognised in connection with customer deliveries and (ii) the estimated cost of sales percentage applicable to the total remaining program. For long-term contracts, the amount reported as cost of sales is recognised as incurred. Substantially all contracts at our BDS segment, certain military derivative aircraft contracts at BCA and certain contracts at our BGS segment are long-term contracts with the U.S. government and other customers that generally extend over several years. Costs on these contracts are recorded as incurred.

The following table summarises cost of sales:

(Dollars in millions)

Years ended Dec, 31	2018	2017	Change	2017	2016	Change
Cost of sales	\$81,490	\$76,612	\$4,878	\$76,612	\$79,026	(\$2,414)
Cost of sales as a % of Revenues	80.6%	81.5%	0.9%	81.5%	84.5%	(3.0)%

Sources: Boeing Annual Report - 2018

Cost of sales in 2018 increased by \$4,878 million, or 6%, compared with 2017, primarily due to higher revenue and higher reach-forward losses at BCA and BDS. Cost of sales in 2017 decreased by \$2,414 million, or 3%, compared with 2016, primarily due to lower reach-forward losses at BCA and BDS.

Reconciliation of GAAP Measures to Non-GAAP Measures

The table below reconciles the non-GAAP financial measures of core operating earnings, core operating margin and core earnings per share with the most directly comparable GAAP financial measures of earnings from operations, operating margins and diluted earnings per share.

(Dollars in millions, except per share data)

Years ended Dec, 31,	2018	2017	2016
Revenues	\$101,127	\$94,005	\$93,496
Earnings from operations, as reported	\$11,987	\$10,344	\$6,527
Operating margins	11.9%	11.0%	7.0%
Pension FAS/CAS service cost adjustment ⁽¹⁾	(\$1,005)	(\$1,127)	(\$1,029)
Postretirement FAS/CAS service cost adjustment ⁽¹⁾	(\$322)	(\$311)	(\$328)
FAS/CAS service cost adjustment ⁽¹⁾	(\$1,327)	(\$1,438)	(\$1,357)
Core operating earnings (non-GAAP)	\$10,660	\$8,906	\$5,170
Core operating margins (non-GAAP)	10.5%	9.5%	5.5%
Diluted earnings per share, as reported	\$17.85	\$13.85	\$7.83
Pension FAS/CAS service cost adjustment ⁽¹⁾	(\$1.71)	(\$1.84)	(\$1.60)
Postretirement FAS/CAS service cost adjustment ⁽¹⁾	(\$0.55)	(\$0.51)	(\$0.51)
Non-operating pension expense ⁽²⁾	(\$0.24)	(\$0.19)	\$0.51
Non-operating postretirement expense ⁽²⁾	\$0.17	\$0.20	\$0.23
Provision for deferred income taxes on adjustments ⁽³⁾	\$0.49	\$0.82	\$0.48
Core earnings per share (non-GAAP)	\$16.01	\$12.33	\$6.94
Weighted average diluted shares (in millions)	586.2	610.7	643.8

Sources: Boeing Annual Report - 2018

(1) FAS/CAS service cost adjustment represents the difference between the FAS pension and postretirement service costs calculated under GAAP and costs allocated to the business segments. This adjustment is excluded from Core operating earnings (non-GAAP).

(2) Non-operating pension and postretirement expenses represent the components of net periodic benefit costs other than service cost. These expenses are included in Other income/(loss), net and are excluded from Core earnings per share (non-GAAP).

(3) The income tax impact is calculated using the U.S. corporate statutory tax rate.

Total Costs Calculation

Gross profit is calculated as Total revenues minus total costs and expenses. Total costs and expenses include Cost of products, Cost of services and Boeing Capital interest expense. During the third quarter of 2018, Boeing recorded a tax benefit of \$412 related to the

settlement of 2013-2014 federal tax audit. During the fourth quarter of 2017, as a result of the enactment of the TCJA, Boeing recorded provisional tax benefits of \$1,271, primarily related to the remeasurement of net U.S. deferred tax liabilities. During 2018 and 2017, higher estimated costs to complete the KC-46A Tanker contract for the U.S. Air Force resulted in reach-forward losses. Boeing recorded \$81, \$426, \$179 and \$50 in the first, second, third and fourth quarters of 2018, respectively. Boeing recorded \$138 and \$314 in the first and third quarters of 2017.

During the third quarter of 2018, upon contract award, Boeing recorded charges of \$400 associated with anticipated losses on the T-X Trainer and \$291 on the MQ-25 Stingray. During the second quarter of 2018, Boeing recorded a charge of \$148 related to the outcome of the Spirit litigation, including the write-off of \$137 of receivables. Boeing increased our quarterly dividend from \$1.42 to \$1.71 in December 2017 and to \$2.06 in December 2018.

Critical Accounting Policies: Accounting for Long-term Contracts

Substantially all contracts at BDS, certain military derivative aircraft contracts at BCA and certain contracts at BGS are long-term contracts. Boeing long-term contracts typically represent a single distinct performance obligation due to the highly interdependent and interrelated nature of the underlying goods and/or services and the significant service of integration that the management provide.

Accounting for long-term contracts involves a judgmental process of estimating the total sales, costs, and profit for each performance obligation. Cost of sales is recognised as incurred, and revenue is determined by adding a proportionate amount of the estimated profit to the amount reported as cost of sales.

Due to the size, duration and nature of many of our long-term contracts, the estimation of total sales and costs through completion is complicated and subject to many variables. Total sales estimates are based on negotiated contract prices and quantities, modified by the company's assumptions regarding contract options, change orders, incentive and award provisions associated with technical performance, and price adjustment clauses (such as inflation or index-based clauses). The majority of these long-term contracts are with the U.S. government, where the price is generally based on the estimated cost to produce the product or service plus profit.

Federal Acquisition Regulations guide the types of cost that will be reimbursed in establishing contract price. Total cost estimates are primarily based on negotiated or estimated purchase contract terms, historical performance trends, business base and other economic projections. Factors that influence these estimates include inflationary patterns,

technical and schedule risk, internal and subcontractor performance trends, business volume assumptions, asset utilisation, and anticipated labour agreements.

Revenue and cost estimates for all significant long-term contract performance obligations are reviewed and reassessed quarterly. Changes in these estimates could result in recognition of cumulative catch-up adjustments to the performance obligation's inception to date revenues, cost of sales and profit, in the period in which such changes are made. Changes in revenue and cost estimates could also result in a reach-forward loss or an adjustment to a reach-forward loss, which would be recorded immediately in earnings. For the years ended December 31, 2018, and 2016 net unfavourable cumulative catch-up adjustments, including reach-forward losses, across all long-term contracts, decreased Earnings from operations by \$190 million and \$263 million. For the year ended December 31, 2017, net favourable cumulative catch-up adjustments, including reach-forward losses, across all long-term contracts increased Earnings from operations by \$250 million.

Due to the significance of judgment in the estimation process described above, materially different earnings could likely be recorded if we used different assumptions or if the underlying circumstances were to change. Changes in underlying assumptions/estimates, supplier performance, or circumstances may adversely or positively affect financial performance in future periods. If the combined gross margin for all long-term contract performance obligations for all of 2018 had been estimated to be higher or lower by 1%, it would have increased or decreased pre-tax income for the year by approximately \$297 million. In addition, a number of Boeing fixed-price development contracts are in a reach-forward loss position. Changes to estimated losses are recorded immediately in earnings.

Conclusion and Recommendations

The aerospace market is strong and growing. Boeing will continue to capture the opportunity before them by working together as they called "One Boeing", strengthening what they already do well and driving improvements as they sharpen and accelerate their pace of progress - critical tenets of their powerful strategy. Set forth in their vision, this strategy guides them in pursuit of their bold goals and aspiration to be the best in aerospace and an enduring global industrial champion.

Boeing aspires to clear a higher bar, achieving world-class performance in every area of their business when compared to leading companies both inside and outside aircraft industry. This is important because, increasingly, they are not just competing with aerospace companies; but they are going head-to-head with hard-charging businesses outside their sector in many areas, such as the fierce competition for talent.

While Boeing still has work to do in pursuit of our long-term goals, the management proud of the progress they have made and the success of their strategy, which is reflected in Boeing strong 2018 performance. The company booked record 2018 revenue of \$101 billion, exceeding \$100 billion for the first time in company history driven by record commercial aircraft deliveries; higher defence, space and security volume; and continued growth in services. While they grew their top-line, the company also generated record earnings and cash, fueling investments in their people and innovation and returning value for all the stakeholders.

With a combined market opportunity of \$8.1 trillion over the next ten years, Boeing is not a company in search of a market. They are well-positioned to win and match the growing demand for their offerings in commercial, defence, space and services. Boeing forecast a need for nearly 43,000 new commercial aeroplanes over the next 20 years, effectively doubling the size of today's global fleet. The company defence portfolio features proven, world-class platforms to address current needs and innovative, effective and affordable new franchise programs including the T-X trainer and MQ-25 unmanned aerial refueler. The services sector represents a significant opportunity as they aim to continue outpacing the average services market growth rate of 3.5 per cent.

Boeing in 2018 and recent 2019 milestones demonstrate their ongoing progress to meet customer needs, including first deliveries of the KC-46 tanker, 787-10 Dreamliner and 737 MAX 9; key program wins with T-X, MQ-25 and the MH-139 helicopter; orders for 893 commercial aeroplanes across our portfolio; and new business successes, including services orders totalling approximately \$18 billion. This progress is fueled by our people and aligned to their strategy.

Until the end of 2018, total backlog rose to \$490 billion, with Commercial Airplanes accounting for \$412 billion and nearly 5,900 jetliners. Boeing remains in a strong position to be competitive across addressable commercial aeroplane markets, valued at \$6.3 trillion over the next 20 years. Boeing won 893 Commercial Airplanes net orders and delivered a record 806 Commercial Airplanes in 2018, maintaining market share lead for the seventh consecutive year. Offering strong portfolio growth, Defense, Space & Security secured wins for the T-X trainer, MQ-25 and MH-139. Total backlog was \$57 billion, of which 30 per cent represents orders from outside the U.S. Global Services showed strong growth in its second year, driven by a higher parts volume.



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