



February 28, 2019

Q4 2018

Financial information

Financial Information

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Key Figures

(\$ in millions, unless otherwise indicated)	Q4 2018	Q4 2017	CHANGE	
			US\$	Comparable ⁽¹⁾
Orders	6,985	6,328	10%	7%
Order backlog (end December)	13,084	12,491	5%	6%
Revenues	7,395	6,804	9%	5%
Income from operations	275	324	-15%	
Operational EBITA ⁽¹⁾	584	664	-12%	-10% ⁽²⁾
as % of operational revenues ⁽¹⁾	7.9%	9.7%	-1.8 pts	
Income from continuing operations, net of tax	210	214	-2%	
Net income attributable to ABB	317	393	-19%	
Basic earnings per share from continuing operations (\$)	0.10	0.10	0% ⁽³⁾	
Basic earnings per share (\$)	0.15	0.18	-19% ⁽³⁾	
Operational earnings per share ⁽¹⁾ (\$)	0.30	0.33	-9% ⁽³⁾	-6% ⁽³⁾
Cash flow from operating activities	1,867	1,869	0%	

(\$ in millions, unless otherwise indicated)	FY 2018	FY 2017	CHANGE	
			US\$	Comparable ⁽¹⁾
Orders	28,590	25,034	14%	8%
Revenues	27,662	25,196	10%	4%
Income from operations	2,226	2,230	0%	
Operational EBITA ⁽¹⁾	3,005	2,817	7%	5% ⁽²⁾
as % of operational revenues ⁽¹⁾	10.9%	11.2%	-0.3 pts	
Income from continuing operations, net of tax	1,575	1,519	4%	
Net income attributable to ABB	2,173	2,213	-2%	
Basic earnings per share from continuing operations (\$)	0.71	0.67	5% ⁽³⁾	
Basic earnings per share (\$)	1.02	1.04	-2% ⁽³⁾	
Operational earnings per share ⁽¹⁾ (\$)	1.33	1.25	7% ⁽³⁾	8% ⁽³⁾
Cash flow from operating activities	2,924	3,799	-23%	

(1) For a reconciliation of non-GAAP measures see "[Supplemental Reconciliations and Definitions](#)" on page 41.

(2) Constant currency (not adjusted for portfolio changes).

(3) Earnings per share growth rates are computed using unrounded amounts. Comparable Operational earnings per share growth is in constant currency (2014 foreign exchange rates and not adjusted for changes in the business portfolio).

(\$ in millions, unless otherwise indicated)		Q4 2018	Q4 2017	CHANGE		
				US\$	Local	Comparable
Orders	ABB Group	6,985	6,328	10%	15%	7%
	Electrification Products	3,139	2,556	23%	27%	2%
	Industrial Automation	1,866	1,795	4%	8%	8%
	Robotics and Motion	2,175	2,039	7%	11%	11%
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(195)	(62)			
Third-party base orders	ABB Group	6,554	5,904	11%	16%	5%
	Electrification Products	3,032	2,394	27%	31%	3%
	Industrial Automation	1,639	1,642	0%	4%	4%
	Robotics and Motion	1,872	1,837	2%	6%	6%
	<i>Corporate and Other</i>	11	31			
Order backlog (end December)	ABB Group	13,084	12,491	5%	10%	6%
	Electrification Products	4,113	3,098	33%	39%	7%
	Industrial Automation	5,148	5,301	-3%	2%	2%
	Robotics and Motion	4,016	3,823	5%	10%	10%
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(193)	269			
Revenues	ABB Group	7,395	6,804	9%	13%	5%
	Electrification Products	3,320	2,696	23%	28%	3%
	Industrial Automation	1,938	2,011	-4%	0%	0%
	Robotics and Motion	2,341	2,197	7%	11%	11%
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(204)	(100)			
Income from operations	ABB Group	275	324			
	Electrification Products	221	318			
	Industrial Automation	204	214			
	Robotics and Motion	326	247			
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(476)	(455)			
Income from operations %	ABB Group	3.7%	4.8%			
	Electrification Products	6.7%	11.8%			
	Industrial Automation	10.5%	10.6%			
	Robotics and Motion	13.9%	11.2%			
Operational EBITA	ABB Group	584	664	-12%	-10%	
	Electrification Products	388	398	-3%	2%	
	Industrial Automation	251	299	-16%	-14%	
	Robotics and Motion	349	303	15%	20%	
	<i>Corporate and Other</i>					
	<i>Non-core and divested businesses</i>	(194)	(138)			
	<i>Stranded corporate costs</i>	(72)	(73)			
	<i>Corporate and inter-division elim.</i>	(138)	(125)			
Operational EBITA %	ABB Group	7.9%	9.7%			
	Electrification Products	11.7%	14.7%			
	Industrial Automation	12.9%	14.9%			
	Robotics and Motion	15.0%	13.8%			
Cash flow from operating activities	ABB Group	1,867	1,869			
	Electrification Products	636	590			
	Industrial Automation	372	356			
	Robotics and Motion	476	388			
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(78)	(9)			
	<i>Discontinued operations</i>	461	544			

(\$ in millions, unless otherwise indicated)		FY 2018	FY 2017	CHANGE		
				US\$	Local	Comparable
Orders	ABB Group	28,590	25,034	14%	14%	8%
	Electrification Products	11,867	10,143	17%	16%	4%
	Industrial Automation	7,631	6,553	16%	15%	8%
	Robotics and Motion	9,570	8,465	13%	12%	12%
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(478)	(127)			
Third-party base orders	ABB Group	26,448	23,189	14%	13%	6%
	Electrification Products	11,240	9,559	18%	17%	4%
	Industrial Automation	6,592	5,840	13%	12%	4%
	Robotics and Motion	8,560	7,651	12%	11%	11%
	<i>Corporate and Other</i>	56	139			
Order backlog (end December)	ABB Group	13,084	12,491	5%	10%	6%
	Electrification Products	4,113	3,098	33%	39%	7%
	Industrial Automation	5,148	5,301	-3%	2%	2%
	Robotics and Motion	4,016	3,823	5%	10%	10%
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(193)	269			
Revenues	ABB Group	27,662	25,196	10%	9%	4%
	Electrification Products	11,686	10,094	16%	16%	3%
	Industrial Automation	7,394	6,879	7%	7%	1%
	Robotics and Motion	9,147	8,396	9%	8%	8%
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(565)	(173)			
Income from operations	ABB Group	2,226	2,230			
	Electrification Products	1,290	1,352			
	Industrial Automation	887	798			
	Robotics and Motion	1,346	1,126			
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(1,297)	(1,046)			
Income from operations %	ABB Group	8.0%	8.9%			
	Electrification Products	11.0%	13.4%			
	Industrial Automation	12.0%	11.6%			
	Robotics and Motion	14.7%	13.4%			
Operational EBITA	ABB Group	3,005	2,817	7%	5%	
	Electrification Products	1,626	1,510	8%	6%	
	Industrial Automation	1,019	953	7%	7%	
	Robotics and Motion	1,447	1,260	15%	14%	
	<i>Corporate and Other</i>					
	<i>Non-core and divested businesses</i>	(291)	(163)			
	<i>Stranded corporate costs</i>	(297)	(286)			
	<i>Corporate and inter-division elim.</i>	(499)	(457)			
Operational EBITA %	ABB Group	10.9%	11.2%			
	Electrification Products	13.9%	15.0%			
	Industrial Automation	13.8%	13.9%			
	Robotics and Motion	15.8%	15.0%			
Cash flow from operating activities	ABB Group	2,924	3,799			
	Electrification Products	1,389	1,358			
	Industrial Automation	833	865			
	Robotics and Motion	1,200	1,119			
	<i>Corporate and Other (incl. inter-division eliminations)</i>	(1,070)	(754)			
	<i>Discontinued operations</i>	572	1,211			

Operational EBITA

(\$ in millions, unless otherwise indicated)	ABB		Electrification Products		Industrial Automation		Robotics and Motion	
	Q4 18	Q4 17	Q4 18	Q4 17	Q4 18	Q4 17	Q4 18	Q4 17
	Revenues	7,395	6,804	3,320	2,696	1,938	2,011	2,341
FX/commodity timing differences in total revenues	(7)	47	4	16	7	(2)	(17)	6
Operational revenues	7,388	6,851	3,324	2,712	1,945	2,009	2,324	2,203
Income from operations	275	324	221	318	204	214	326	247
Acquisition-related amortization	75	65	35	22	20	22	15	16
Restructuring and restructuring-related expenses ⁽¹⁾	129	108	76	17	31	36	8	35
Changes in obligations related to divested businesses	14	-	-	-	-	-	-	-
Changes in pre-acquisition estimates	6	8	17	8	(11)	-	-	-
Gains and losses from sale of businesses	4	78	-	-	-	-	4	-
Acquisition- and divestment-related expenses and integration costs	56	41	40	12	1	27	1	2
Certain other non-operational items	25	28	-	8	2	-	4	-
FX/commodity timing differences in income from operations	-	12	(1)	13	4	-	(9)	3
Operational EBITA	584	664	388	398	251	299	349	303
Operational EBITA margin (%)	7.9%	9.7%	11.7%	14.7%	12.9%	14.9%	15.0%	13.8%

(\$ in millions, unless otherwise indicated)	ABB		Electrification Products		Industrial Automation		Robotics and Motion	
	FY 18	FY 17	FY 18	FY 17	FY 18	FY 17	FY 18	FY 17
	Revenues	27,662	25,196	11,686	10,094	7,394	6,879	9,147
FX/commodity timing differences in total revenues	(2)	(15)	18	(11)	-	(32)	(10)	3
Operational revenues	27,660	25,181	11,704	10,083	7,394	6,847	9,137	8,399
Income from operations	2,226	2,230	1,290	1,352	887	798	1,346	1,126
Acquisition-related amortization	273	229	106	98	86	47	63	66
Restructuring and restructuring-related expenses ⁽¹⁾	172	300	98	28	35	85	21	64
Changes in obligations related to divested businesses	106	94	-	-	-	-	-	-
Changes in pre-acquisition estimates	8	8	19	8	(11)	-	-	-
Gains and losses from sale of businesses	(57)	(252)	(81)	-	3	(2)	4	-
Acquisition- and divestment-related expenses and integration costs	204	81	168	23	4	52	2	2
Certain other non-operational items	40	161	(2)	21	3	1	11	-
FX/commodity timing differences in income from operations	33	(34)	28	(20)	12	(28)	-	2
Operational EBITA	3,005	2,817	1,626	1,510	1,019	953	1,447	1,260
Operational EBITA margin (%)	10.9%	11.2%	13.9%	15.0%	13.8%	13.9%	15.8%	15.0%

(1) Amounts in 2017 also include the incremental implementation costs in relation to the White Collar Productivity program.

Depreciation and Amortization

(\$ in millions)	ABB		Electrification Products		Industrial Automation		Robotics and Motion	
	Q4 18	Q4 17	Q4 18	Q4 17	Q4 18	Q4 17	Q4 18	Q4 17
	Depreciation	149	145	64	53	17	18	34
Amortization	95	80	41	25	22	24	17	18
including total acquisition-related amortization of:	75	65	35	22	20	22	15	16

(\$ in millions)	ABB		Electrification Products		Industrial Automation		Robotics and Motion	
	FY 18	FY 17	FY 18	FY 17	FY 18	FY 17	FY 18	FY 17
	Depreciation	578	549	229	205	69	59	139
Amortization	338	287	126	110	91	53	69	77
including total acquisition-related amortization of:	273	229	106	98	86	47	63	66

Orders received and revenues by region

(\$ in millions, unless otherwise indicated)	Orders received		CHANGE			Revenues		CHANGE		
	Q4 18	Q4 17	US\$	Local	Com- parable	Q4 18	Q4 17	US\$	Local	Com- parable
	Europe	2,423	2,318	5%	9%	4%	2,650	2,512	5%	10%
The Americas	2,358	1,793	32%	35%	12%	2,244	1,758	28%	31%	6%
Asia, Middle East and Africa	2,146	2,137	0%	5%	7%	2,439	2,453	-1%	3%	3%
Intersegment orders/revenues ⁽¹⁾	58	80				62	81			
ABB Group	6,985	6,328	10%	15%	7%	7,395	6,804	9%	13%	5%

(\$ in millions, unless otherwise indicated)	Orders received		CHANGE			Revenues		CHANGE		
	FY 18	FY 17	US\$	Local	Com- parable	FY 18	FY 17	US\$	Local	Com- parable
	Europe	10,617	9,090	17%	14%	10%	10,013	9,032	11%	9%
The Americas	8,205	6,964	18%	19%	7%	8,003	6,831	17%	19%	7%
Asia, Middle East and Africa	9,523	8,716	9%	8%	6%	9,403	9,070	4%	4%	4%
Intersegment orders/revenues ⁽¹⁾	245	264				243	263			
ABB Group	28,590	25,034	14%	14%	8%	27,662	25,196	10%	9%	4%

(1) Intersegment orders/revenues include sales to the Power Grids business which is presented as discontinued operations and are not eliminated from Total orders/revenues.

Consolidated Financial Information

ABB Ltd Consolidated Income Statements (unaudited)

(\$ in millions, except per share data in \$)	Year ended		Three months ended	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Sales of products	22,366	20,438	5,888	5,411
Sales of services and other	5,296	4,758	1,507	1,393
Total revenues	27,662	25,196	7,395	6,804
Cost of sales of products	(15,961)	(14,485)	(4,388)	(3,938)
Cost of services and other	(3,157)	(2,865)	(920)	(864)
Total cost of sales	(19,118)	(17,350)	(5,308)	(4,802)
Gross profit	8,544	7,846	2,087	2,002
Selling, general and administrative expenses	(5,295)	(4,765)	(1,459)	(1,303)
Non-order related research and development expenses	(1,147)	(1,013)	(331)	(297)
Other income (expense), net	124	162	(22)	(78)
Income from operations	2,226	2,230	275	324
Interest and dividend income	72	73	11	20
Interest and other finance expense	(262)	(234)	(66)	(45)
Non-operational pension (cost) credit	83	33	6	4
Income from continuing operations before taxes	2,119	2,102	226	303
Provision for taxes	(544)	(583)	(16)	(89)
Income from continuing operations, net of tax	1,575	1,519	210	214
Income from discontinued operations, net of tax	723	846	135	209
Net income	2,298	2,365	345	423
Net income attributable to noncontrolling interests	(125)	(152)	(28)	(30)
Net income attributable to ABB	2,173	2,213	317	393
Amounts attributable to ABB shareholders:				
Income from continuing operations, net of tax	1,514	1,441	204	204
Income from discontinued operations, net of tax	659	772	113	189
Net income	2,173	2,213	317	393
Basic earnings per share attributable to ABB shareholders:				
Income from continuing operations, net of tax	0.71	0.67	0.10	0.10
Income from discontinued operations, net of tax	0.31	0.36	0.05	0.09
Net income	1.02	1.04	0.15	0.18
Diluted earnings per share attributable to ABB shareholders:				
Income from continuing operations, net of tax	0.71	0.67	0.10	0.09
Income from discontinued operations, net of tax	0.31	0.36	0.05	0.09
Net income	1.02	1.03	0.15	0.18
Weighted-average number of shares outstanding (in millions) used to compute:				
Basic earnings per share attributable to ABB shareholders	2,132	2,138	2,132	2,136
Diluted earnings per share attributable to ABB shareholders	2,139	2,148	2,134	2,150

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Condensed Consolidated Statements of Comprehensive Income (unaudited)

(\$ in millions)	Year ended		Three months ended	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Total comprehensive income (loss), net of tax	1,326	3,232	(132)	505
Total comprehensive income attributable to noncontrolling interests, net of tax	(110)	(177)	(36)	(38)
Total comprehensive income (loss) attributable to ABB shareholders, net of tax	1,216	3,055	(168)	467

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Consolidated Balance Sheets (unaudited)

(\$ in millions, except share data)	Dec. 31, 2018	Dec. 31, 2017
Cash and equivalents	3,445	4,526
Marketable securities and short-term investments	712	1,083
Receivables, net	6,386	5,861
Contract assets	1,082	1,141
Inventories, net	4,284	3,737
Prepaid expenses	176	159
Other current assets	616	585
Current assets held for sale	5,164	5,043
Total current assets	21,865	22,135
Property, plant and equipment, net	4,133	3,804
Goodwill	10,764	9,536
Other intangible assets, net	2,607	2,425
Prepaid pension and other employee benefits	83	143
Investments in equity-accounted companies	87	72
Deferred taxes	1,006	1,212
Other non-current assets	469	571
Non-current assets held for sale	3,427	3,560
Total assets	44,441	43,458
Accounts payable, trade	4,424	3,736
Contract liabilities	1,707	1,792
Short-term debt and current maturities of long-term debt	2,031	726
Provisions for warranties	948	909
Other provisions	1,372	1,277
Other current liabilities	3,780	3,509
Current liabilities held for sale	4,185	4,520
Total current liabilities	18,447	16,469
Long-term debt	6,587	6,682
Pension and other employee benefits	1,828	1,589
Deferred taxes	927	1,050
Other non-current liabilities	1,689	1,849
Non-current liabilities held for sale	429	470
Total liabilities	29,907	28,109
<i>Commitments and contingencies</i>		
Stockholders' equity:		
Common stock, CHF 0.12 par value (2,168,148,264 issued shares at December 31, 2018 and 2017)	188	188
Additional paid-in capital	56	29
Retained earnings	19,839	19,594
Accumulated other comprehensive loss	(5,311)	(4,345)
Treasury stock, at cost (36,185,858 and 29,541,775 shares at December 31, 2018 and 2017, respectively)	(820)	(647)
Total ABB stockholders' equity	13,952	14,819
Noncontrolling interests	582	530
Total stockholders' equity	14,534	15,349
Total liabilities and stockholders' equity	44,441	43,458

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Consolidated Statements of Cash Flows (unaudited)

(\$ in millions)	Year ended		Three months ended	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Operating activities:				
Net income	2,298	2,365	345	423
Less: Income from discontinued operations, net of tax	(723)	(846)	(135)	(209)
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	916	836	244	225
Deferred taxes	(146)	(204)	(185)	(246)
Net loss (gain) from derivatives and foreign exchange	93	29	14	27
Net loss (gain) from sale of property, plant and equipment	(57)	(37)	–	(14)
Net loss (gain) from sale of businesses	(57)	(252)	4	78
Share-based payment arrangements	50	49	18	15
Other	(72)	9	(3)	(7)
Changes in operating assets and liabilities:				
Trade receivables, net	(144)	(178)	114	112
Contract assets and liabilities	(18)	6	78	46
Inventories, net	(336)	(66)	125	142
Accounts payable, trade	454	474	306	204
Accrued liabilities	252	99	89	(4)
Provisions, net	87	(4)	111	55
Income taxes payable and receivable	(102)	202	(6)	151
Other assets and liabilities, net	(143)	106	287	327
Net cash provided by operating activities – continuing operations	2,352	2,588	1,406	1,325
Net cash provided by operating activities – discontinued operations	572	1,211	461	544
Net cash provided by operating activities	2,924	3,799	1,867	1,869
Investing activities:				
Purchases of investments	(322)	(666)	(13)	(254)
Purchases of property, plant and equipment and intangible assets	(772)	(752)	(235)	(248)
Acquisition of businesses (net of cash acquired) and increases in cost- and equity-accounted companies	(2,664)	(2,011)	(5)	(11)
Proceeds from investments	567	1,443	199	45
Proceeds from maturity of investments	160	100	–	–
Proceeds from sales of property, plant and equipment	72	61	23	15
Proceeds from sales of businesses (net of transaction costs and cash disposed) and cost- and equity-accounted companies	113	607	(14)	(57)
Net cash from settlement of foreign currency derivatives	(30)	63	9	(29)
Other investing activities	(32)	37	(4)	10
Net cash used in investing activities – continuing operations	(2,908)	(1,118)	(40)	(529)
Net cash used in investing activities – discontinued operations	(177)	(332)	(44)	(85)
Net cash used in investing activities	(3,085)	(1,450)	(84)	(614)
Financing activities:				
Net changes in debt with original maturities of 90 days or less	221	204	(345)	(157)
Increase in debt	1,914	920	–	20
Repayment of debt	(830)	(1,000)	(492)	(349)
Delivery of shares	42	163	–	77
Purchase of treasury stock	(250)	(251)	–	–
Dividends paid	(1,717)	(1,635)	–	–
Dividends paid to noncontrolling shareholders	(86)	(83)	(3)	(6)
Other financing activities	(35)	(6)	(76)	8
Net cash used in financing activities – continuing operations	(741)	(1,688)	(916)	(407)
Net cash used in financing activities – discontinued operations	(48)	(47)	–	–
Net cash used in financing activities	(789)	(1,735)	(916)	(407)
Effects of exchange rate changes on cash and equivalents	(131)	268	(26)	29
Net change in cash and equivalents	(1,081)	882	841	877
Cash and equivalents, beginning of period	4,526	3,644	2,604	3,649
Cash and equivalents, end of period	3,445	4,526	3,445	4,526
Supplementary disclosure of cash flow information:				
Interest paid	243	205	95	66
Income taxes paid	1,026	894	245	243

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

ABB Ltd Consolidated Statements of Changes in Stockholders' Equity (unaudited)

(\$ in millions)	Common stock	Additional paid-in capital	Retained earnings	Accumulated other comprehensive loss	Treasury stock	Total ABB stockholders' equity	Non-controlling interests	Total stockholders' equity
Balance at January 1, 2017	192	24	19,925	(5,187)	(1,559)	13,395	502	13,897
Comprehensive income:								
Net income			2,213			2,213	152	2,365
Foreign currency translation adjustments, net of tax of \$(1)				899		899	25	924
Effect of change in fair value of available-for-sale securities, net of tax of \$0				1		1		1
Unrecognized income (expense) related to pensions and other postretirement plans, net of tax of \$(16)				(71)		(71)		(71)
Change in derivatives qualifying as cash flow hedges, net of tax of \$2				13		13		13
Total comprehensive income						3,055	177	3,232
Changes in noncontrolling interests		17				17	(14)	3
Dividends to noncontrolling shareholders								
Dividends paid to shareholders			(1,622)			(1,622)	(134)	(1,756)
Share-based payment arrangements		58				58		58
Cancellation of treasury shares	(4)	(27)	(922)		953			
Purchase of treasury stock					(251)	(251)		(251)
Delivery of shares		(46)			209	163		163
Call options		4				4		4
Balance at December 31, 2017	188	29	19,594	(4,345)	(647)	14,819	530	15,349
Balance at January 1, 2018	188	29	19,594	(4,345)	(647)	14,819	530	15,349
Cumulative effect of changes in accounting principles								
			(192)	(9)		(201)		(201)
Comprehensive income:								
Net income			2,173			2,173	125	2,298
Foreign currency translation adjustments, net of tax of \$(14)				(631)		(631)	(15)	(646)
Effect of change in fair value of available-for-sale securities, net of tax of \$(1)				(3)		(3)		(3)
Unrecognized income (expense) related to pensions and other postretirement plans, net of tax of \$(32)				(295)		(295)		(295)
Change in derivatives qualifying as cash flow hedges, net of tax of \$(3)				(28)		(28)		(28)
Total comprehensive income						1,216	110	1,326
Changes in noncontrolling interests		(4)				(4)	(19)	(23)
Noncontrolling interests recognized in connection with business combination								
							107	107
Dividends to noncontrolling shareholders								
Dividends paid to shareholders			(1,736)			(1,736)	(146)	(1,882)
Share-based payment arrangements		60				60		60
Purchase of treasury stock					(249)	(249)		(249)
Delivery of shares		(35)			77	42		42
Call options		5				5		5
Balance at December 31, 2018	188	56	19,839	(5,311)	(820)	13,952	582	14,534

Due to rounding, numbers presented may not add to the totals provided.

See Notes to the Consolidated Financial Information

Notes to the Consolidated Financial Information (unaudited)

Note 1

The Company and basis of presentation

ABB Ltd and its subsidiaries (collectively, the Company) together form a pioneering technology leader in power grids, electrification products, industrial automation and robotics and motion, serving customers in utilities, industry and transport & infrastructure globally.

The Company's Consolidated Financial Information is prepared in accordance with United States of America generally accepted accounting principles (U.S. GAAP) for interim financial reporting. As such, the Consolidated Financial Information does not include all the information and notes required under U.S. GAAP for annual consolidated financial statements. Therefore, such financial information should be read in conjunction with the audited consolidated financial statements in the Company's Annual Report for the year ended December 31, 2017.

The preparation of financial information in conformity with U.S. GAAP requires management to make assumptions and estimates that directly affect the amounts reported in the Consolidated Financial Information. The most significant, difficult and subjective of such accounting assumptions and estimates include:

- estimates and assumptions used in determining the fair values of assets and liabilities assumed in business combinations,
- assumptions used in the determination of corporate costs directly attributable to discontinued operations,
- assumptions used in determining inventory obsolescence and net realizable value,
- estimates used to record expected costs for employee severance in connection with restructuring programs,
- assumptions and projections, principally related to future material, labor and project related overhead costs, used in determining the percentage of completion on projects,
- estimates of loss contingencies associated with litigation or threatened litigation and other claims and inquiries, environmental damages, product warranties, self-insurance reserves, regulatory and other proceedings,
- assumptions used in the calculation of pension and postretirement benefits and the fair value of pension plan assets,
- estimates to determine valuation allowances for deferred tax assets and amounts recorded for uncertain tax positions,
- growth rates, discount rates and other assumptions used to determine impairment of long lived assets and in testing goodwill for impairment, and
- assessment of the allowance for doubtful accounts.

The actual results and outcomes may differ from the Company's estimates and assumptions.

A portion of the Company's activities (primarily long-term construction activities) has an operating cycle that exceeds one year. For classification of current assets and liabilities related to such activities, the Company elected to use the duration of the individual contracts as its operating cycle. Accordingly, there are accounts receivable, contract assets, inventories and provisions related to these contracts which will not be realized within one year that have been classified as current.

Basis of presentation

In the opinion of management, the unaudited Consolidated Financial Information contains all necessary adjustments to present fairly the financial position, results of operations and cash flows for the reported periods. Management considers all such adjustments to be of a normal recurring nature.

The Company has retained obligations (primarily for environmental and taxes) related to businesses disposed or otherwise exited that qualified as discontinued operations. Changes to these retained obligations are recorded in income/loss from discontinued operations, net of tax.

The Consolidated Financial Information is presented in United States dollars (\$) unless otherwise stated. Due to rounding, numbers presented in the Consolidated Financial Information may not add to the totals provided.

Discontinued operations and reclassifications

In December 2018, the Company announced an agreement to divest its Power Grids business to Hitachi Corp. (Japan) (See Note 3 for additional information and relevant disclosures). As a result, this business along with certain real estate assets previously included in Corporate and Other, have been reported as discontinued operations. Financial information and disclosures for prior periods have been retroactively recast to give effect to the discontinued operations presentation. In addition, amounts relating to stranded corporate costs have been separately disclosed as a component of Corporate and Other (see Note 15).

In addition, certain amounts reported in the Consolidated Financial Information for prior periods have been reclassified to conform to the current year's presentation. These changes primarily relate to:

- the reorganization of the Company's operating segments (see Note 15), and
- as a result of the adoption of a number of accounting pronouncements (see Note 2):
 - (i) the reclassification of Unbilled receivables from Receivables to Contract assets,
 - (ii) the reclassification of Billings in excess of sales, Advances from customers, certain advances to customers previously reported as a reduction in Inventories, and deferred revenues previously reported in Other current liabilities, to Contract liabilities, and
 - (iii) the reclassification of certain net periodic pension and postretirement benefits costs/credits from Total cost of sales, Selling, general and administrative expenses and Non-order related research and development expenses to Non-operational pension (cost) credit.

Note 2

Recent accounting pronouncements

Applicable for current periods

Revenue from contracts with customers

As of January 1, 2018, the Company adopted a new accounting standard for recognizing revenues from contracts with customers on a modified retrospective basis, applying it to contracts which were not completed at the date of initial application and utilizing the practical expedient for contract modifications. The new standard, which supersedes substantially all previously existing revenue recognition guidance, provides a single comprehensive model for recognizing revenues on the transfer of promised goods or services to customers for an amount that reflects the consideration that is expected to be received for those goods or services. The adoption of this standard resulted in only insignificant differences between the identification of performance obligations and the unit of accounting determination. Therefore, the cumulative effect on retained earnings of retrospectively applying this standard was not significant. However, total assets and total liabilities increased by \$196 million, including \$50 million relating to assets and liabilities held for sale, due to the reclassification of certain advances from customers, previously reported as a reduction in Inventories, to liabilities.

Other than the additional disclosure requirements, the impact of the adoption on the Company's Consolidated Financial Information for the year and three months ended December 31, 2018, was not significant.

Income taxes – Intra-entity transfers of assets other than inventory

In January 2018, the Company adopted an accounting standard update requiring it to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs instead of when the asset has been sold to an outside party. This update was applied on a modified retrospective basis and resulted in a net reduction in deferred tax assets of \$201 million with a corresponding reduction in retained earnings.

Improving the presentation of net periodic pension cost and net periodic postretirement benefit cost

In January 2018, the Company adopted an accounting standard update which changes how employers that sponsor defined benefit pension plans and other postretirement plans present the net periodic benefit cost in the income statement. Under this standard, the Company is required to report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. Other components of net periodic benefit cost are required to be presented in the income statement separately from the service cost component and outside the subtotal of income from operations. Under the amendment only the current service cost component is allowed to be capitalized as a cost of internally manufactured inventory or a self-constructed asset. This update was applied retrospectively for the presentation requirements, and prospectively for the capitalization of the current service cost component requirements. The Company has used the practical expedient, as the amount of other components of net periodic benefit cost capitalized in inventory for prior periods is not significant.

For the twelve and three months ended December 31, 2017, the Company reclassified \$33 million and \$4 million, respectively, of income and presented it outside of income from operations relating to net periodic pension costs.

Recognition and measurement of financial assets and financial liabilities

In January 2018, the Company adopted two accounting standard updates enhancing the reporting model for financial instruments, which include amendments to address aspects of recognition, measurement, presentation and disclosure. The Company is required to measure equity investments (except those accounted for under the equity method) at fair value with changes in fair value recognized in net income. The adoption of these updates resulted in the reclassification of the net cumulative unrealized gains on available-for-sale equity securities of \$9 million (net of tax) at December 31, 2017 from Total accumulated comprehensive loss to Retained earnings on January 1, 2018.

Classification of certain cash receipts and cash payments in the statement of cash flows

In January 2018, the Company adopted an accounting standard update which clarifies how certain cash receipts and cash payments, including debt prepayment or extinguishment costs, the settlement of zero coupon debt instruments, contingent consideration paid after a business combination, proceeds from insurance settlements, distributions from certain equity method investees and beneficial interests obtained in a financial asset securitization, should be presented and classified in the statement of cash flows. This update was applied retrospectively and did not have a significant impact on the consolidated financial statements.

Statement of cash flows - Restricted cash

In January 2018, the Company adopted an accounting standard update which clarifies the classification and presentation of changes in restricted cash on the statement of cash flows. It requires the inclusion of cash and cash equivalents that have restrictions on withdrawal or use in total cash and cash equivalents on the statement of cash flows. This update did not have a significant impact on the consolidated financial statements.

Clarifying the definition of a business

In January 2018, the Company adopted an accounting standard update which narrows the definition of a business. It also provides a framework for determining whether a set of transferred assets and activities involves a business. This update was applied prospectively and did not have a significant impact on the consolidated financial statements.

Clarifying the scope of asset derecognition guidance and accounting for partial sales of nonfinancial assets

In January 2018, the Company adopted an accounting standard update which clarifies the scope of asset derecognition guidance, adds guidance for partial sales of nonfinancial assets and clarifies recognizing gains and losses from the transfer of nonfinancial assets in contracts with noncustomers. This update was applied retrospectively and did not have a significant impact on the consolidated financial statements.

Compensation—Stock Compensation

In January 2018, the Company adopted an accounting standard update which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under this update, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. This update was applied prospectively and did not have a significant impact on the consolidated financial statements.

Disclosure Framework — Changes to the disclosure requirements for defined benefit plans

In December 2018, the Company adopted an accounting standard update which modifies the disclosure requirements for defined benefit pension or other postretirement benefit plans. The update removes certain disclosures relating to (i) amounts expected to be recognized in net periodic benefit cost over the next twelve months, (ii) plan assets expected to be returned to the Company, (iii) a one-percentage-point change in assumed health care costs, and (iv) related parties, including insurance and annuity contracts. It clarifies the disclosure requirements for both the projected and accumulated benefit obligations, as well as requiring additional disclosures for cash balance plans and explanations for significant gains and losses related to changes in the benefit obligations. This update was applied on a retrospective basis and did not have a significant impact on the consolidated financial statements.

Applicable for future periods

Leases

In February 2016, an accounting standard update was issued that requires lessees to recognize lease assets and corresponding lease liabilities on the balance sheet for all leases with terms of more than twelve months with several practical expedients. The update, which supersedes existing lease guidance, will continue to classify leases as either finance or operating, with the classification determining the pattern of expense recognition in the income statement. It also requires additional disclosures about the Company's leasing activities. The Company has elected to not recognize lease assets and lease liabilities for leases with terms of less than twelve months and to not separate lease and non-lease components for leases other than real estate. This update is effective for the Company for annual and interim periods beginning January 1, 2019, and is applicable on a modified retrospective basis with various optional practical expedients.

In July 2018, a further accounting standard update was issued, allowing the Company the additional option of adopting the standard retrospectively with the cumulative-effect of initially applying the new standard recognized at the date of adoption in retained earnings. A further update was issued in December 2018 clarifying certain aspects of accounting for leases by lessors.

The Company will elect to adopt the standard using the additional option outlined above and currently expects the update will increase total assets and total liabilities by approximately \$1.4 billion of which approximately \$0.2 billion relate to assets and liabilities held for sale. The Company expects that the adoption of this update will only have an insignificant impact on its results of operations and cash flows.

Measurement of credit losses on financial instruments

In June 2016, an accounting standard update was issued which replaces the existing incurred loss impairment methodology for most financial assets with a new "current expected credit loss" model. The new model will result in the immediate recognition of the estimated credit losses expected to occur over the remaining life of financial assets such as trade and other receivables, held-to-maturity debt securities, loans and other instruments. Credit losses relating to available-for-sale debt securities will be measured in a manner similar to current GAAP, except that the losses will be recorded through an allowance for credit losses rather than as a direct write-down of the security.

This update is effective for the Company for annual and interim periods beginning January 1, 2020, with early adoption permitted for annual and interim periods beginning January 1, 2019. The Company is currently evaluating the impact of this update on its consolidated financial statements.

Derivatives and Hedging—Targeted improvements to accounting for hedging activities

In August 2017, an accounting standard update was issued which expands and refines hedge accounting for both financial and non-financial risk components, aligns the recognition and presentation of the effects of hedging instruments and hedge items in the financial statements, and includes certain targeted improvements to ease the application of current guidance related to the assessment of hedge effectiveness. This update is effective for the Company for annual and interim periods beginning January 1, 2019. For cash flow and net investment hedges as of the adoption date, the guidance requires a modified retrospective approach. The amended presentation and disclosure guidance is required only prospectively. The Company will adopt this update as of January 1, 2019, and does not believe that this update will have a significant impact on its consolidated financial statements.

Reclassification of certain tax effects from accumulated other comprehensive income

In February 2018, an accounting standard update was issued which allows a reclassification of the stranded tax effects in accumulated other comprehensive income resulting from the Tax Cuts and Jobs Act of 2017 to retained earnings. This update is effective for the Company for annual and interim periods beginning January 1, 2019. The updated guidance is to be applied in the period of adoption or retrospectively to each period in which the effect of the Tax Cuts and Jobs Act related to items remaining in accumulated other comprehensive income are recognized. The Company is currently evaluating the impact of this update on its consolidated financial statements.

Customer's accounting for implementation costs incurred in a cloud computing arrangement that is a service contract

In August 2018, an accounting standard update was issued which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This update is effective for the Company for annual and interim periods beginning January 1, 2020, with early adoption in any interim period permitted. The Company is currently evaluating the impact of this update on its consolidated financial statements.

Disclosure Framework — Changes to the disclosure requirements for fair value measurement

In August 2018, an accounting standard update was issued which modifies the disclosure requirements for fair value measurements. The update eliminates the requirements to disclose the amount of and reasons for transfers between Level 1 and 2 of the fair value hierarchy, the timing of transfers between levels and the Level 3 valuation process, while expanding the Level 3 disclosures to include the range and weighted average used to develop significant unobservable inputs and the changes in unrealized gains and losses on recurring fair value measurements. This update is effective for the Company for annual and interim periods beginning January 1, 2020, with early adoption permitted. The changes and modifications to the Level 3 disclosures are to be applied prospectively, while all other amendments are to be applied retrospectively. The Company is currently evaluating the impact of this update on its disclosures but does not expect that it will have a material effect on its consolidated financial statements.

Note 3

Acquisitions and Divestments

Acquisitions

Acquisitions were as follows:

(\$ in millions, except number of acquired businesses)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Purchase price for acquisitions (net of cash acquired) ⁽¹⁾	2,638	1,992	2	3
Aggregate excess of purchase price over fair value of net assets acquired ⁽²⁾	1,472	1,267	39	(1)
Number of acquired businesses	3	4	–	1

(1) Excluding changes in cost- and equity-accounted companies

(2) Recorded as goodwill.

In the table above, the “Purchase price for acquisitions” and “Aggregate excess of purchase price over fair value of net assets acquired” amounts for the year ended December 31, 2018, relate primarily to the acquisition of GE Industrial Solutions (GEIS). The amounts for the year ended December 31, 2017, relate primarily to the acquisition of Bernecker + Rainer Industrie-Elektronik GmbH (B&R).

Acquisitions of controlling interests have been accounted for under the acquisition method and have been included in the Company’s Consolidated Financial Statements since the date of acquisition.

On June 30, 2018, the Company acquired through numerous share and asset purchases substantially all the assets, liabilities and business activities of GEIS, GE’s global electrification solutions business. GEIS, headquartered in Atlanta, United States, provides technologies that distribute and control electricity and support the commercial, data center, health care, mining, renewable energy, oil and gas, water and telecommunications sectors. The resulting cash outflows for the Company amounted to \$2,622 million (net of cash acquired of \$192 million). The acquisition strengthens the Company’s global position in electrification and expands its access to the North American market through strong customer relationships, a large installed base and extensive distribution networks. Consequently, the goodwill acquired represents expected operating synergies and cost savings as well as intangible assets that are not separable such as employee know-how and expertise.

While the Company uses its best estimates and assumptions as part of the purchase price allocation process to value assets acquired and liabilities assumed at the acquisition date, the purchase price allocation for acquisitions is preliminary for up to 12 months after the acquisition date and is subject to refinement as more detailed analyses are completed and additional information about the fair values of the assets and liabilities becomes available. Given the timing and complexity of the acquisition of GEIS, the purchase price allocation in the Company’s Consolidated Financial Information has not yet been finalized, primarily relating to amounts allocated to net working capital, pension obligations, current and deferred income taxes as well as intangible assets. Changes in allocated amounts could also affect the amount attributable to the noncontrolling interest. At December 31, 2018, the Company is still gathering, analyzing and evaluating relevant information, including certain inputs required for the valuation of intangibles. As a result, amounts recorded in the preliminary purchase price allocation may change in 2019. The final purchase price adjustments as well as the final fair value determinations could result in material adjustments to the values presented in the preliminary purchase price allocation table below.

On July 6, 2017, the Company acquired the shares of B&R. B&R is a worldwide provider of product- and software-based, open-architecture solutions for machine and factory automation. This acquisition closes a gap in the Company’s industrial automation portfolio and consequently the goodwill acquired represents the future benefits associated with product portfolio expansion.

The aggregate preliminary allocation of the purchase consideration for business acquisitions in the year ended December 31, 2018 and 2017, was as follows:

Year ended December 31, (\$ in millions)	2018			Weighted- average useful life	2017	
	Preliminary allocated amounts ⁽¹⁾				Allocated amounts ⁽¹⁾	Weighted- average useful life
	GEIS	Other	Total			
Technology	87	–	87	7 years	412	7 years
Customer relationships	214	–	214	14 years	264	20 years
Trade names	122	–	122	13 years	61	10 years
Supply agreement	34	–	34	13 years	–	
Intangible assets	457	–	457		737	
Property, plant and equipment	379	9	388		131	
Debt acquired	–	–	–		(50)	
Deferred tax liabilities	(110)	(1)	(111)		(249)	
Inventories	435	3	438		176	
Other assets and liabilities, net ⁽²⁾	126	(25)	101		(20)	
Goodwill ⁽³⁾	1,442	30	1,472		1,267	
Noncontrolling interest	(107)	–	(107)		–	
Total consideration (net of cash acquired)⁽⁴⁾	2,622	16	2,638		1,992	

(1) Excludes measurement period adjustments related to prior year acquisitions.

(2) Gross receivables from the GEIS acquisitions totaled \$658 million; the fair value of which was \$624 million after adjusting for contractual cash flows not expected to be collected.

(3) The Company expects that goodwill recorded in certain jurisdictions will be tax deductible. The amount is subject to the finalization of the purchase price allocation in 2019.

(4) Primarily relates to the acquisition of GEIS in 2018 and B&R in 2017. Cash acquired in the GEIS acquisition totaled \$192 million.

The Company's Consolidated Income Statement for the year and three months ended December 31, 2018, includes total revenues of \$1,317 million and \$683 million, respectively, and net income of \$1 million and \$25 million, respectively, in respect of GEIS since the date of acquisition.

The unaudited pro forma financial information in the table below summarizes the combined pro forma results of the Company and GEIS for the year and three months ended December 31, 2018 and 2017, as if GEIS had been acquired on January 1, 2017.

(\$ in millions)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Total revenues	28,936	27,881	7,395	7,528
Income from continuing operations, net of tax	1,622	1,631	210	277

The pro forma results are for information purposes only and do not include any anticipated cost synergies or other effects of the planned integration of GEIS. Accordingly, such pro forma amounts are not necessarily indicative of the results that would have occurred had the acquisition been completed on the date indicated, nor are they indicative of the future operating results of the combined company.

The unaudited pro forma results above include certain adjustments related to the GEIS acquisition. The table below summarizes the adjustments necessary to present the pro forma financial information of the combined entity as if GEIS had been acquired on January 1, 2017.

(\$ in millions)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Impact on cost of sales from additional amortization of intangible assets	(10)	(20)	–	(4)
Impact on cost of sales from fair valuing acquired inventory	26	(26)	–	–
Impact on cost of sales from additional depreciation of property, plant and equipment	(4)	(8)	–	(1)
Impact on selling, general and administrative expenses from additional amortization of intangible assets	(5)	(12)	–	(1)
Impact on selling, general and administrative expenses from acquisition-related costs	44	20	–	10
Impact on interest from financing costs	(15)	(62)	–	(14)
Taxation adjustments	(5)	33	–	7
Total pro forma adjustments	31	(75)	–	(3)

Business divestments

For the year and three months ended December 31, 2017, the Company recorded net gains (including transaction costs) of \$252 million and net losses (including transaction costs) of \$78 million, respectively, in "Other income (expense), net". For the year and three months ended December 31, 2017, an associated tax expense of \$7 million and tax benefit of \$21 million, respectively, relating to the divestment of consolidated businesses were recorded in "Provision for taxes". These are primarily due to the divestment of the Company's high-voltage cable system and cable accessories businesses in March 2017 (the Cables business) and the Oil & Gas EPC business in December 2017.

The Company has retained certain obligations of the Cables business and thus the Company remains directly or indirectly liable for these liabilities which existed at the date of the divestment. Subsequent to the divestment, in the year ended December 31, 2017, the Company recorded a loss of \$94 million for changes in the amounts recorded for these obligations. In addition, the Company has provided certain performance guarantees to third parties which guarantee the performance of the buyer under existing contracts with customers as well as for certain capital expenditures of the divested business (see Note 7).

Held for sale and discontinued operations

The Company reports a disposal, or planned disposal, of a component or a group of components as a discontinued operation if the disposal represents a strategic shift that has or will have a major effect on the Company's operations and financial results. A strategic shift could include a disposal of a major geographical area, a major line of business or other major parts of the Company. A component may be a reportable segment or an operating segment, a reporting unit, a subsidiary, or an asset group.

Assets and liabilities of a component reported as a discontinued operation are presented as held for sale in the Company's Consolidated Balance Sheets.

Interest that is not directly attributable to or related to the Company's continuing business or discontinued business is allocated to discontinued operations based on the ratio of net assets to be sold less debt that is required to be paid as a result of the planned disposal transaction to the sum of total net assets of the Company plus consolidated debt. General corporate overhead is not allocated to discontinued operations.

In December 2018, the Company announced an agreement to divest 80.1 percent of its Power Grids business to Hitachi Ltd. (Hitachi), valuing the business at \$11 billion. The business also includes certain real estate properties which were previously reported within Corporate and Other. The divestment is expected to be completed in the first half of 2020, following the receipt of customary regulatory approvals. As this divestment represents a strategic shift that will have a major effect on the Company's operations and financial results, the results of operations for this business have been presented as discontinued operations and the assets and liabilities are reflected as held-for-sale for all periods presented.

Operating results of the discontinued businesses are summarized as follows:

(\$ in millions)	Year ended		Three months ended	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Total revenues	9,698	10,028	2,623	2,721
Total cost of sales	(7,378)	(7,501)	(2,052)	(2,065)
Gross profit	2,320	2,527	571	656
Expenses	(1,326)	(1,376)	(381)	(377)
Income from operations	994	1,152	189	279
Net interest and other finance expense	(55)	(42)	(14)	(6)
Non-operational pension (cost) credit	12	9	3	4
Income from discontinued operations before taxes	951	1,119	179	278
Provision for taxes	(228)	(273)	(44)	(69)
Income from discontinued operations, net of tax	723	846	135	209

Of the total Income from discontinued operations before taxes in the table above, \$874 million and \$1,034 million in 2018 and 2017, respectively, and \$158 million and \$256 million in the three months ended December 31, 2018 and 2017, respectively, are attributable to the Company, while the remainder is attributable to noncontrolling interests.

Income from discontinued operations before taxes excludes certain costs which were previously allocated to the Power Grids operating segment as these costs were not directly attributable to the business. As a result, for the year ended December 31, 2018 and 2017, \$297 million and \$286 million, respectively, and for the three months ended December 31, 2018 and 2017, \$72 million and \$73 million, respectively, of allocated overhead and other management costs (Stranded corporate costs), which were previously included in the measure of segment profit for the Power Grids operating segment are now reported as part of Corporate and Other. In the year and three months ended December 31, 2018, Income from discontinued operations before taxes includes \$18 million and \$16 million, respectively, of separation costs incurred to execute the transaction. These costs primarily include advisory services.

Included in the reported Total revenues of the Company for the year ended December 31, 2018 and 2017, are revenues from the Company's operating segments to the Power Grids business of \$243 million and \$263 million, respectively, which represent intercompany transactions that, prior to Power Grids being classified as a discontinued operation, were eliminated in the Company's Consolidated Financial Information. In the three months ended December 31, 2018 and 2017, these revenues amounted to \$62 million and \$81 million, respectively (See Note 15).

The major components of assets and liabilities held for sale in the Company's Consolidated Balance Sheets are summarized as follows:

(\$ in millions)	Dec. 31, 2018	Dec. 31, 2017
Receivables, net	2,377	2,406
Contract assets	1,236	1,008
Inventories, net	1,457	1,518
Other current assets	94	111
Current assets held for sale	5,164	5,043
Property, plant and equipment, net	1,477	1,559
Goodwill	1,620	1,663
Other non-current assets	330	338
Non-current assets held for sale	3,427	3,560
Accounts payable, trade	1,732	1,683
Contract liabilities	998	1,116
Other current liabilities	1,455	1,721
Current liabilities held for sale	4,185	4,520
Pension and other employee benefits	268	293
Other non-current liabilities	161	177
Non-current liabilities held for sale	429	470

Goodwill

Changes in total goodwill were as follows:

(\$ in millions)	Total Goodwill
Balance at January 1, 2017	7,953
Goodwill acquired during the year ⁽¹⁾	1,267
Goodwill allocated to disposals ⁽²⁾	(2)
Exchange rate differences and other	318
Balance at December 31, 2017	9,536
Goodwill acquired during the year ⁽³⁾	1,472
Goodwill allocated to disposals	(31)
Exchange rate differences and other	(213)
Balance at December 31, 2018	10,764

(1) Includes primarily goodwill in respect of B&R, acquired in July 2017, which has been allocated to the Industrial Automation operating segment.

(2) Goodwill allocated to the high-voltage cable system business sold in March 2017, within Corporate and Other (formerly reported in the Power Grids operating segment) was reported as assets held-for-sale at December 31, 2016.

(3) Includes primarily goodwill in respect of GEIS, acquired in June 2018, which has been allocated to the Electrification Products operating segment.

Note 4

Cash and equivalents, marketable securities and short-term investments

Cash and equivalents, marketable securities and short-term investments consisted of the following:

(\$ in millions)	December 31, 2018					
	Cost basis	Gross unrealized gains	Gross unrealized losses	Fair value	Cash and equivalents	Marketable securities and short-term investments
Changes in fair value recorded in net income						
Cash	1,983	–	–	1,983	1,983	–
Time deposits	1,463	–	–	1,463	1,462	1
Other short-term investments	206	–	–	206	–	206
Equity securities ⁽¹⁾	206	–	(3)	203	–	203
	3,858	–	(3)	3,855	3,445	410
Changes in fair value recorded in other comprehensive income						
Debt securities available-for-sale:						
U.S. government obligations	217	–	(3)	214	–	214
Corporate	90	–	(2)	88	–	88
	307	–	(5)	302	–	302
Total	4,165	–	(8)	4,157	3,445	712

(\$ in millions)	December 31, 2017					
	Cost basis	Gross unrealized gains	Gross unrealized losses	Fair value	Cash and equivalents	Marketable securities and short-term investments
Changes in fair value recorded in net income						
Cash	1,963	–	–	1,963	1,963	–
Time deposits	2,834	–	–	2,834	2,563	271
Other short-term investments	305	–	–	305	–	305
	5,102	–	–	5,102	4,526	576
Changes in fair value recorded in other comprehensive income						
Equity securities	152	13	–	165	–	165
Debt securities available-for-sale:						
U.S. government obligations	127	–	(2)	125	–	125
Other government obligations	2	–	–	2	–	2
Corporate	215	1	(1)	215	–	215
	496	14	(3)	507	–	507
Total	5,598	14	(3)	5,609	4,526	1,083

(1) See "New accounting pronouncements - Applicable for current period" in Note 2 for changes applicable in 2018.

Other short-term investments at December 31, 2018 and 2017, are receivables of \$206 million and \$305 million, respectively, representing reverse repurchase agreements. These collateralized lendings, made to a financial institution, have maturity dates of less than one year.

Note 5

Derivative financial instruments

The Company is exposed to certain currency, commodity, interest rate and equity risks arising from its global operating, financing and investing activities. The Company uses derivative instruments to reduce and manage the economic impact of these exposures.

Currency risk

Due to the global nature of the Company's operations, many of its subsidiaries are exposed to currency risk in their operating activities from entering into transactions in currencies other than their functional currency. To manage such currency risks, the Company's policies require the subsidiaries to hedge their foreign currency exposures from binding sales and purchase contracts denominated in foreign currencies. For

forecasted foreign currency denominated sales of standard products and the related foreign currency denominated purchases, the Company's policy is to hedge up to a maximum of 100 percent of the forecasted foreign currency denominated exposures, depending on the length of the forecasted exposures. Forecasted exposures greater than 12 months are not hedged. Forward foreign exchange contracts are the main instrument used to protect the Company against the volatility of future cash flows (caused by changes in exchange rates) of contracted and forecasted sales and purchases denominated in foreign currencies. In addition, within its treasury operations, the Company primarily uses foreign exchange swaps and forward foreign exchange contracts to manage the currency and timing mismatches arising in its liquidity management activities.

Commodity risk

Various commodity products are used in the Company's manufacturing activities. Consequently it is exposed to volatility in future cash flows arising from changes in commodity prices. To manage the price risk of commodities, the Company's policies require that the subsidiaries hedge the commodity price risk exposures from binding contracts, as well as at least 50 percent (up to a maximum of 100 percent) of the forecasted commodity exposure over the next 12 months or longer (up to a maximum of 18 months). Primarily swap contracts are used to manage the associated price risks of commodities.

Interest rate risk

The Company has issued bonds at fixed rates. Interest rate swaps are used to manage the interest rate risk associated with certain debt and generally such swaps are designated as fair value hedges. In addition, from time to time, the Company uses instruments such as interest rate swaps, interest rate futures, bond futures or forward rate agreements to manage interest rate risk arising from the Company's balance sheet structure but does not designate such instruments as hedges.

Equity risk

The Company is exposed to fluctuations in the fair value of its warrant appreciation rights (WARs) issued under its management incentive plan. A WAR gives its holder the right to receive cash equal to the market price of an equivalent listed warrant on the date of exercise. To eliminate such risk, the Company has purchased cash-settled call options, indexed to the shares of the Company, which entitle the Company to receive amounts equivalent to its obligations under the outstanding WARs.

Volume of derivative activity

In general, while the Company's primary objective in its use of derivatives is to minimize exposures arising from its business, certain derivatives are designated and qualify for hedge accounting treatment while others either are not designated or do not qualify for hedge accounting.

Foreign exchange and interest rate derivatives

The gross notional amounts of outstanding foreign exchange and interest rate derivatives (whether designated as hedges or not) were as follows:

Type of derivative (\$ in millions)	Total notional amounts at	
	December 31, 2018	December 31, 2017
Foreign exchange contracts	13,612	16,261
Embedded foreign exchange derivatives	733	899
Interest rate contracts	3,300	5,706

Derivative commodity contracts

The Company uses derivatives to hedge its direct or indirect exposure to the movement in the prices of commodities which are primarily copper, silver and aluminum. The following table shows the notional amounts of outstanding derivatives (whether designated as hedges or not), on a net basis, to reflect the Company's requirements for these commodities:

Type of derivative	Unit	Total notional amounts at	
		December 31, 2018	December 31, 2017
Copper swaps	metric tonnes	46,143	28,976
Silver swaps	ounces	2,861,294	1,966,729
Aluminum swaps	metric tonnes	9,491	1,869

Equity derivatives

At December 31, 2018 and 2017, the Company held 41 million and 37 million cash-settled call options indexed to ABB Ltd shares (conversion ratio 5:1) with a total fair value of \$6 million and \$42 million, respectively.

Cash flow hedges

As noted above, the Company mainly uses forward foreign exchange contracts to manage the foreign exchange risk of its operations, commodity swaps to manage its commodity risks and cash-settled call options to hedge its WAR liabilities. Where such instruments are designated and qualify as cash flow hedges, the effective portion of the changes in their fair value is recorded in "Accumulated other comprehensive loss" and subsequently reclassified into earnings in the same line item and in the same period as the underlying hedged transaction affects earnings. Any ineffectiveness in the hedge relationship, or hedge component excluded from the assessment of effectiveness, is recognized in earnings during the current period.

At December 31, 2018 and 2017, "Accumulated other comprehensive loss" included net unrealized losses of \$16 million and net unrealized gains of \$12 million, respectively, net of tax, on derivatives designated as cash flow hedges. Of the amount at December 31, 2018, net losses of \$6 million are expected to be reclassified to earnings in the following 12 months. At December 31, 2018, the longest maturity of a derivative classified as a cash flow hedge was 61 months.

The amount of gains or losses, net of tax, reclassified into earnings due to the discontinuance of cash flow hedge accounting and the amount of ineffectiveness in cash flow hedge relationships directly recognized in earnings were not significant in the year and three months ended December 31, 2018 and 2017.

The pre-tax effects of derivative instruments, designated and qualifying as cash flow hedges, on “Accumulated other comprehensive loss” (OCI) and the Consolidated Income Statements were as follows:

(\$ in millions)	Gains (losses) recognized in OCI on derivatives (effective portion)		Gains (losses) reclassified from OCI into income (effective portion)	
	2018	2017	2018	2017
Year ended December 31,				
Type of derivative			Location	
Foreign exchange contracts			Total revenues	2
	(6)	3	Total cost of sales	2
Commodity contracts	(9)	9	Total cost of sales	6
Cash-settled call options	(36)	22	SG&A expenses ⁽¹⁾	15
Total	(51)	34	(22)	25

(\$ in millions)	Gains (losses) recognized in OCI on derivatives (effective portion)		Gains (losses) reclassified from OCI into income (effective portion)	
	2018	2017	2018	2017
Three months ended December 31,				
Type of derivative			Location	
Foreign exchange contracts			Total revenues	1
	(1)	1	Total cost of sales	-
Commodity contracts	(2)	5	Total cost of sales	2
Cash-settled call options	(16)	11	SG&A expenses ⁽¹⁾	7
Total	(19)	17	(12)	10

(1) SG&A expenses represent “Selling, general and administrative expenses”.

The amounts in respect of gains (losses) recognized in income for hedge ineffectiveness and amounts excluded from effectiveness testing were not significant for the year and three months ended December 31, 2018 and 2017.

Net derivative losses of \$24 million and net derivative gains of \$23 million, both net of tax, were reclassified from “Accumulated other comprehensive loss” to earnings during the year ended December 31, 2018 and 2017, respectively. During the three months ended December 31, 2018 and 2017, net derivative losses of \$13 million and \$11 million, both net of tax, respectively, were reclassified from “Accumulated other comprehensive loss” to earnings.

Fair value hedges

To reduce its interest rate exposure arising primarily from its debt issuance activities, the Company uses interest rate swaps. Where such instruments are designated as fair value hedges, the changes in the fair value of these instruments, as well as the changes in the fair value of the risk component of the underlying debt being hedged, are recorded as offsetting gains and losses in “Interest and other finance expense”. Hedge ineffectiveness of instruments designated as fair value hedges for the year and three months ended December 31, 2018 and 2017, was not significant.

The effect of interest rate contracts, designated and qualifying as fair value hedges, on the Consolidated Income Statements was as follows:

(\$ in millions)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Gains (losses) recognized in Interest and other finance expense:				
- on derivatives designated as fair value hedges	(4)	(23)	32	(20)
- on hedged item	5	27	(32)	22

Derivatives not designated in hedge relationships

Derivative instruments that are not designated as hedges or do not qualify as either cash flow or fair value hedges are economic hedges used for risk management purposes. Gains and losses from changes in the fair values of such derivatives are recognized in the same line in the income statement as the economically hedged transaction.

Furthermore, under certain circumstances, the Company is required to split and account separately for foreign currency derivatives that are embedded within certain binding sales or purchase contracts denominated in a currency other than the functional currency of the subsidiary and the counterparty.

The gains (losses) recognized in the Consolidated Income Statements on derivatives not designated in hedging relationships were as follows:

Type of derivative not designated as a hedge (\$ in millions)	Location	Gains (losses) recognized in income			
		Year ended December 31,		Three months ended December 31,	
		2018	2017	2018	2017
Foreign exchange contracts	Total revenues	(121)	92	(2)	(19)
	Total cost of sales	46	(41)	(20)	(7)
	SG&A expenses ⁽¹⁾	10	(18)	–	1
	Non-order related research and development	(1)	–	–	–
	Interest and other finance expense	40	22	16	(21)
Embedded foreign exchange contracts	Total revenues	58	7	–	20
	Total cost of sales	(4)	(2)	1	(4)
	SG&A expenses ⁽¹⁾	2	5	–	–
Commodity contracts	Total cost of sales	(33)	31	(4)	13
Other	Interest and other finance expense	3	(2)	–	–
Total		–	94	(9)	(17)

(1) SG&A expenses represent "Selling, general and administrative expenses".

The fair values of derivatives included in the Consolidated Balance Sheets were as follows:

(\$ in millions)	December 31, 2018			
	Derivative assets		Derivative liabilities	
	Current in "Other current assets"	Non-current in "Other non-current assets"	Current in "Other current liabilities"	Non-current in "Other non-current liabilities"
Derivatives designated as hedging instruments:				
Foreign exchange contracts	–	–	1	4
Commodity contracts	–	–	2	–
Interest rate contracts	–	35	–	1
Cash-settled call options	3	3	–	–
Total	3	38	3	5
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	117	14	160	30
Commodity contracts	8	1	21	1
Embedded foreign exchange derivatives	15	10	8	1
Total	140	25	189	32
Total fair value	143	63	192	37

(\$ in millions)	December 31, 2017			
	Derivative assets		Derivative liabilities	
	Current in "Other current assets"	Non-current in "Other non-current assets"	Current in "Other current liabilities"	Non-current in "Other non-current liabilities"
Derivatives designated as hedging instruments:				
Foreign exchange contracts	1	–	–	1
Commodity contracts	5	–	–	–
Interest rate contracts	–	41	–	4
Cash-settled call options	25	16	–	–
Total	31	57	–	5
Derivatives not designated as hedging instruments:				
Foreign exchange contracts	134	24	183	62
Commodity contracts	31	1	7	–
Cross-currency interest rate swaps	–	–	2	–
Cash-settled call options	–	1	–	–
Embedded foreign exchange derivatives	15	10	15	3
Total	180	36	207	65
Total fair value	211	93	207	70

Close-out netting agreements provide for the termination, valuation and net settlement of some or all outstanding transactions between two counterparties on the occurrence of one or more pre-defined trigger events.

Although the Company is party to close-out netting agreements with most derivative counterparties, the fair values in the tables above and in the Consolidated Balance Sheets at December 31, 2018 and 2017, have been presented on a gross basis.

The Company's netting agreements and other similar arrangements allow net settlements under certain conditions. At December 31, 2018 and 2017, information related to these offsetting arrangements was as follows:

(\$ in millions)						December 31, 2018					
Type of agreement or similar arrangement	Gross amount of recognized assets	Derivative liabilities eligible for set-off in case of default	Cash collateral received	Non-cash collateral received	Net asset exposure						
Derivatives	181	(121)	–	–	60						
Reverse repurchase agreements	206	–	–	(206)	–						
Total	387	(121)	–	(206)	60						

(\$ in millions)						December 31, 2018					
Type of agreement or similar arrangement	Gross amount of recognized liabilities	Derivative liabilities eligible for set-off in case of default	Cash collateral pledged	Non-cash collateral pledged	Net liability exposure						
Derivatives	220	(121)	–	–	99						
Total	220	(121)	–	–	99						

(\$ in millions)						December 31, 2017					
Type of agreement or similar arrangement	Gross amount of recognized assets	Derivative liabilities eligible for set-off in case of default	Cash collateral received	Non-cash collateral received	Net asset exposure						
Derivatives	279	(167)	–	–	112						
Reverse repurchase agreements	305	–	–	(305)	–						
Total	584	(167)	–	(305)	112						

(\$ in millions)						December 31, 2017					
Type of agreement or similar arrangement	Gross amount of recognized liabilities	Derivative liabilities eligible for set-off in case of default	Cash collateral pledged	Non-cash collateral pledged	Net liability exposure						
Derivatives	259	(167)	–	–	92						
Total	259	(167)	–	–	92						

Note 6 Fair values

The Company uses fair value measurement principles to record certain financial assets and liabilities on a recurring basis and, when necessary, to record certain non-financial assets at fair value on a non-recurring basis, as well as to determine fair value disclosures for certain financial instruments carried at amortized cost in the financial statements. Financial assets and liabilities recorded at fair value on a recurring basis include foreign currency, commodity and interest rate derivatives, as well as cash-settled call options and available-for-sale securities. Non-financial assets recorded at fair value on a non-recurring basis include long-lived assets that are reduced to their estimated fair value due to impairments.

Fair value is the price that would be received when selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, the Company uses various valuation techniques including the market approach (using observable market data for identical or similar assets and liabilities), the income approach (discounted cash flow models) and the cost approach (using costs a market participant would incur to develop a comparable asset). Inputs used to determine the fair value of assets and liabilities are defined by a three-level hierarchy, depending on the nature of those inputs. The Company has categorized its financial assets and liabilities and non-financial assets measured at fair value within this hierarchy based on whether the inputs to the valuation technique are observable or unobservable. An observable input is based on market data obtained from independent sources, while an unobservable input reflects the Company's assumptions about market data.

The levels of the fair value hierarchy are as follows:

- Level 1:** Valuation inputs consist of quoted prices in an active market for identical assets or liabilities (observable quoted prices). Assets and liabilities valued using Level 1 inputs include certain actively traded debt securities.
- Level 2:** Valuation inputs consist of observable inputs (other than Level 1 inputs) such as actively quoted prices for similar assets, quoted prices in inactive markets and inputs other than quoted prices such as interest rate yield curves, credit spreads, or inputs derived from other observable data by interpolation, correlation, regression or other means. The adjustments applied to quoted prices or the inputs used in valuation models may be both observable and unobservable. In these cases, the fair value measurement is classified as Level 2 unless the unobservable portion of the adjustment or the unobservable input to the valuation model is significant, in which case the fair value measurement would be classified as Level 3. Assets and liabilities valued or disclosed using Level 2 inputs include investments in certain funds, reverse repurchase agreements, certain debt securities that are not actively traded, interest rate swaps, commodity swaps, cash-settled call options, forward foreign exchange contracts, foreign exchange swaps and forward rate agreements, time deposits, as well as financing receivables and debt.
- Level 3:** Valuation inputs are based on the Company's assumptions of relevant market data (unobservable input).

Whenever quoted prices involve bid-ask spreads, the Company ordinarily determines fair values based on mid-market quotes. However, for the purpose of determining the fair value of cash-settled call options serving as hedges of the Company's management incentive plan, bid prices are used.

When determining fair values based on quoted prices in an active market, the Company considers if the level of transaction activity for the financial instrument has significantly decreased, or would not be considered orderly. In such cases, the resulting changes in valuation techniques would be disclosed. If the market is considered disorderly or if quoted prices are not available, the Company is required to use another valuation technique, such as an income approach.

Recurring fair value measures

The fair values of financial assets and liabilities measured at fair value on a recurring basis were as follows:

(\$ in millions)	December 31, 2018			Total fair value
	Level 1	Level 2	Level 3	
Assets				
Available-for-sale securities in "Marketable securities and short-term investments":				
Equity securities	–	203	–	203
Debt securities—U.S. government obligations	214	–	–	214
Debt securities—Corporate	–	88	–	88
Derivative assets—current in "Other current assets"	–	143	–	143
Derivative assets—non-current in "Other non-current assets"	–	63	–	63
Total	214	497	–	711
Liabilities				
Derivative liabilities—current in "Other current liabilities"	–	192	–	192
Derivative liabilities—non-current in "Other non-current liabilities"	–	37	–	37
Total	–	229	–	229

(\$ in millions)	December 31, 2017			Total fair value
	Level 1	Level 2	Level 3	
Assets				
Available-for-sale securities in "Marketable securities and short-term investments":				
Equity securities	–	165	–	165
Debt securities—U.S. government obligations	125	–	–	125
Debt securities—Other government obligations	–	2	–	2
Debt securities—Corporate	–	215	–	215
Receivable in "Other non-current assets":				
Receivable under securities lending arrangement	79	–	–	79
Derivative assets—current in "Other current assets"	–	211	–	211
Derivative assets—non-current in "Other non-current assets"	–	93	–	93
Total	204	686	–	890
Liabilities				
Derivative liabilities—current in "Other current liabilities"	–	207	–	207
Derivative liabilities—non-current in "Other non-current liabilities"	–	70	–	70
Total	–	277	–	277

The Company uses the following methods and assumptions in estimating fair values of financial assets and liabilities measured at fair value on a recurring basis:

- Available-for-sale securities in "Marketable securities and short-term investments" and "Other non-current assets": If quoted market prices in active markets for identical assets are available, these are considered Level 1 inputs; however, when markets are not active, these inputs are considered Level 2. If such quoted market prices are not available, fair value is determined using market prices for similar assets or present value techniques, applying an appropriate risk-free interest rate adjusted for nonperformance risk. The inputs used in present value techniques are observable and fall into the Level 2 category. The fair value of the receivable under the securities lending arrangement has been determined based on the fair value of the security lent.
- Derivatives: The fair values of derivative instruments are determined using quoted prices of identical instruments from an active market, if available (Level 1). If quoted prices are not available, price quotes for similar instruments, appropriately adjusted, or present value techniques, based on available market data, or option pricing models are used. Cash-settled call options hedging the Company's WAR liability are valued based on bid prices of the equivalent listed warrant. The fair values obtained using price quotes for similar instruments or valuation techniques represent a Level 2 input unless significant unobservable inputs are used.

Non-recurring fair value measures

There were no significant non-recurring fair value measurements during the year and three months ended December 31, 2018 and 2017.

Disclosure about financial instruments carried on a cost basis

The fair values of financial instruments carried on a cost basis were as follows:

(\$ in millions)	Carrying value	December 31, 2018			Total fair value
		Level 1	Level 2	Level 3	
Assets					
Cash and equivalents (excluding available-for-sale securities with original maturities up to 3 months):					
Cash	1,983	1,983	–	–	1,983
Time deposits	1,462	–	1,462	–	1,462
Marketable securities and short-term investments (excluding available-for-sale securities):					
Time deposits	1	–	1	–	1
Receivables under reverse repurchase agreements	206	–	206	–	206
Other non-current assets:					
Loans granted	30	–	31	–	31
Restricted time deposits	39	39	–	–	39
Liabilities					
Short-term debt and current maturities of long-term debt (excluding capital lease obligations)					
	2,008	1,480	528	–	2,008
Long-term debt (excluding capital lease obligations)	6,457	5,839	707	–	6,546

(\$ in millions)	Carrying value	December 31, 2017			Total fair value
		Level 1	Level 2	Level 3	
Assets					
Cash and equivalents (excluding available-for-sale securities with original maturities up to 3 months):					
Cash	1,963	1,963	–	–	1,963
Time deposits	2,563	–	2,563	–	2,563
Marketable securities and short-term investments (excluding available-for-sale securities):					
Time deposits	271	–	271	–	271
Receivables under reverse repurchase agreements	305	–	305	–	305
Other non-current assets:					
Loans granted	29	–	30	–	30
Restricted time deposits	35	35	–	–	35
Liabilities					
Short-term debt and current maturities of long-term debt (excluding capital lease obligations)					
	694	400	294	–	694
Long-term debt (excluding capital lease obligations)	6,567	6,046	773	–	6,819

The Company uses the following methods and assumptions in estimating fair values of financial instruments carried on a cost basis:

- Cash and equivalents (excluding available-for-sale securities with original maturities up to 3 months), and Marketable securities and short-term investments (excluding available-for-sale securities): The carrying amounts approximate the fair values as the items are short-term in nature.
- Other non-current assets: Includes (i) loans granted whose fair values are based on the carrying amount adjusted using a present value technique to reflect a premium or discount based on current market interest rates (Level 2 inputs), and (ii) restricted time deposits whose fair values approximate the carrying amounts (Level 1 inputs).
- Short-term debt and current maturities of long-term debt (excluding capital lease obligations): Short-term debt includes commercial paper, bank borrowings and overdrafts. The carrying amounts of short-term debt and current maturities of long-term debt, excluding capital lease obligations, approximate their fair values.
- Long-term debt (excluding capital lease obligations): Fair values of bonds are determined using quoted market prices (Level 1 inputs), if available. For bonds without available quoted market prices and other long-term debt, the fair values are determined using a discounted cash flow methodology based upon borrowing rates of similar debt instruments and reflecting appropriate adjustments for non-performance risk (Level 2 inputs).

Note 7

Commitments and contingencies

Contingencies—Regulatory, Compliance and Legal

Antitrust

In April 2014, the European Commission announced its decision regarding its investigation of anticompetitive practices in the cables industry and granted the Company full immunity from fines under its leniency program.

In February 2019, the Brazilian Antitrust Authority (CADE) announced its decision regarding its investigation of anticompetitive practices in certain power businesses of the Company, including flexible alternating current transmission systems (FACTS) and power transformers, and granted the Company full immunity from fines under its leniency program.

Suspect payments

As a result of an internal investigation, the Company self-reported to the Securities and Exchange Commission (SEC) and the Department of Justice (DoJ) in the United States as well as to the Serious Fraud Office (SFO) in the United Kingdom concerning certain of its past dealings with Unaoil and its subsidiaries, including alleged improper payments made by these entities to third parties. The SFO has commenced an investigation into this matter. The Company is cooperating fully with the authorities. At this time, it is not possible for the Company to make an informed judgment about the outcome of these matters.

General

In addition, the Company is aware of proceedings, or the threat of proceedings, against it and others in respect of private claims by customers and other third parties with regard to certain actual or alleged anticompetitive practices. Also, the Company is subject to other claims and legal proceedings, as well as investigations carried out by various law enforcement authorities. With respect to the above-mentioned claims, regulatory matters, and any related proceedings, the Company will bear the related costs including costs necessary to resolve them.

Liabilities recognized

At December 31, 2018 and 2017, the Company had aggregate liabilities of \$221 million and \$229 million, respectively, included in "Other provisions" and "Other non-current liabilities", for the above regulatory, compliance and legal contingencies, and none of the individual liabilities recognized was significant. As it is not possible to make an informed judgment on, or reasonably predict, the outcome of certain matters and as it is not possible, based on information currently available to management, to estimate the maximum potential liability on other matters, there could be material adverse outcomes beyond the amounts accrued.

Guarantees

General

The following table provides quantitative data regarding the Company's third-party guarantees. The maximum potential payments represent a "worst-case scenario", and do not reflect management's expected outcomes.

Maximum potential payments (\$ in millions)	December 31, 2018	December 31, 2017
Performance guarantees	1,584	1,775
Financial guarantees	10	17
Indemnification guarantees	64	72
Total⁽¹⁾	1,658	1,864

(1) Maximum potential payments include amounts in both continuing and discontinued operations.

The carrying amount of liabilities recorded in the Consolidated Balance Sheets reflects the Company's best estimate of future payments, which it may incur as part of fulfilling its guarantee obligations. In respect of the above guarantees, the carrying amounts of liabilities at December 31, 2018 and 2017, were not significant.

The Company is party to various guarantees providing financial or performance assurances to certain third parties. These guarantees, which have various maturities up to 2027, mainly consist of performance guarantees whereby (i) the Company guarantees the performance of a third party's product or service according to the terms of a contract and (ii) as member of a consortium/joint-venture that includes third parties, the Company guarantees not only its own performance but also the work of third parties. Such guarantees may include guarantees that a project will be completed within a specified time. If the third party does not fulfill the obligation, the Company will compensate the guaranteed party in cash or in kind. The original maturity dates for the majority of these performance guarantees range from one to eight years.

In conjunction with the divestment of the high-voltage cable and cables accessories businesses, the Company has entered into various performance guarantees with other parties with respect to certain liabilities of the divested business. At December 31, 2018 and 2017, the maximum potential payable under these guarantees amounts to \$771 million and \$929 million, respectively, and these guarantees have various maturities ranging from one to ten years.

Commercial commitments

In addition, in the normal course of bidding for and executing certain projects, the Company has entered into standby letters of credit, bid/performance bonds and surety bonds (collectively "performance bonds") with various financial institutions. Customers can draw on such performance bonds in the event that the Company does not fulfill its contractual obligations. The Company would then have an obligation to reimburse the financial institution for amounts paid under the performance bonds. At December 31, 2018 and 2017, the total outstanding performance bonds aggregated to \$7.4 billion and \$7.7 billion, respectively, of which \$4.3 billion and \$4.7 billion, respectively, relate to discontinued operations. There have been no significant amounts reimbursed to financial institutions under these types of arrangements in the year and three months ended December 31, 2018 and 2017.

Product and order-related contingencies

The Company calculates its provision for product warranties based on historical claims experience and specific review of certain contracts. The reconciliation of the “Provisions for warranties”, including guarantees of product performance, was as follows:

(\$ in millions)	2018	2017
Balance at January 1,	909	815
Net change in warranties due to acquisitions and divestments	41	30
Claims paid in cash or in kind	(307)	(243)
Net increase in provision for changes in estimates, warranties issued and warranties expired	341	234
Exchange rate differences	(36)	73
Balance at December 31,	948	909

During 2018, the Company recorded changes in the estimated amount for a product warranty relating to a divested business. This warranty liability was increased by a total of \$92 million during the year ended December 31, 2018. The corresponding increases were included in “Cost of sales of products” and as these costs relate to a divested business, they have been excluded from the Company’s primary measure of segment performance, Operational EBITA (see Note 15).

During 2016, the Company determined that the provision for product warranties in its solar business, acquired in 2013 as part of the purchase of Power-One, was no longer sufficient to cover expected warranty costs in the remaining warranty period. Due to higher than originally expected product failure rates for certain solar inverters designed and manufactured by Power-One, a substantial portion of which relates to products which were delivered to customers prior to the acquisition date, the Company increased the previously estimated warranty provision for its solar business during the year and three months ended December 31, 2018, by \$36 million, and during the year and three months ended December 31, 2017, by \$23 million and \$18 million, respectively. For both the year and three months ended December 31, 2018 and 2017, \$16 million and \$8 million, respectively, of the increase in provision relates to products delivered prior to the acquisition date and have been excluded from Operational EBITA. The corresponding increases were included in Cost of sales of products.

The warranty liability has been recorded based on the information currently available and is subject to change in the future.

Note 8

Contract assets and liabilities

The following table provides information about Contract Assets and Contract Liabilities:

(\$ in millions)	December 31, 2018	December 31, 2017	December 31, 2016
Contract assets	1,082	1,141	1,222
Contract liabilities	1,707	1,792	1,690

Contract assets primarily relate to the Company’s right to receive consideration for work completed but for which no invoice has been issued at the reporting date. Contract assets are transferred to receivables when rights to receive payment become unconditional.

Contract liabilities primarily relate to up-front advances received on orders from customers as well as amounts invoiced to customers in excess of revenues recognized predominantly on long-term projects. Contract liabilities are reduced as work is performed and as revenues are recognized.

The significant changes in the Contract assets and Contract liabilities balances were as follows:

(\$ in millions)	Year ended December 31,			
	2018		2017	
	Contract assets	Contract liabilities	Contract assets	Contract liabilities
Revenue recognized, which was included in the Contract liabilities balance at Jan 1, 2018/2017	–	(879)	–	(1,212)
Additions to Contract liabilities - excluding amounts recognized as revenue during the period	–	518	–	868
Receivables recognized that were included in the Contract asset balance at Jan 1, 2018/2017	(633)	–	(584)	–

At December 31, 2018, the Company had unsatisfied performance obligations totaling \$13,084 million and, of this amount, the Company expects to fulfill approximately 76 percent of the obligations in 2019, approximately 14 percent of the obligations in 2020 and the balance thereafter.

Note 9

Debt

The Company's total debt at December 31, 2018 and 2017, amounted to \$8,618 million and \$7,408 million, respectively.

Short-term debt and current maturities of long-term debt

The Company's "Short-term debt and current maturities of long-term debt" consisted of the following:

(\$ in millions)	December 31, 2018	December 31, 2017
Short-term debt	561	317
Current maturities of long-term debt	1,470	409
Total	2,031	726

Short-term debt primarily represented issued commercial paper and short-term loans from various banks. At December 31, 2018 and 2017, \$292 million and \$259 million, respectively, was outstanding under the \$2 billion commercial paper program in the United States. In addition, at December 31, 2018, \$172 million was outstanding under the \$2 billion Euro-commercial paper program.

In November 2018, the Company repaid at maturity the CHF 350 million 1.50% Bonds, equivalent to \$351 million at date of payment.

Long-term debt

The Company's long-term debt at December 31, 2018 and 2017, amounted to \$6,587 million and \$6,682 million, respectively.

Outstanding bonds (including maturities within the next 12 months) were as follows:

(in millions)	December 31, 2018		December 31, 2017	
	Nominal outstanding	Carrying value ⁽¹⁾	Nominal outstanding	Carrying value ⁽¹⁾
Bonds:				
1.50% CHF Bonds, due 2018			CHF 350	\$ 358
2.625% EUR Instruments, due 2019	EUR 1,250	\$ 1,431	EUR 1,250	\$ 1,493
2.8% USD Notes, due 2020	USD 300	\$ 299		–
4.0% USD Notes, due 2021	USD 650	\$ 646	USD 650	\$ 644
2.25% CHF Bonds, due 2021	CHF 350	\$ 373	CHF 350	\$ 378
5.625% USD Notes, due 2021	USD 250	\$ 265	USD 250	\$ 270
2.875% USD Notes, due 2022	USD 1,250	\$ 1,242	USD 1,250	\$ 1,256
3.375% USD Notes, due 2023	USD 450	\$ 448		–
0.625% EUR Instruments, due 2023	EUR 700	\$ 807	EUR 700	\$ 834
0.75% EUR Instruments, due 2024	EUR 750	\$ 862	EUR 750	\$ 889
3.8% USD Notes, due 2028	USD 750	\$ 746		–
4.375% USD Notes, due 2042	USD 750	\$ 723	USD 750	\$ 723
Total		\$ 7,842		\$ 6,845

(1) USD carrying values include unamortized debt issuance costs, bond discounts or premiums, as well as adjustments for fair value hedge accounting, where appropriate.

In April 2018, the Company issued the following notes with a principal of:

- \$300 million, due 2020, paying interest semi-annually in arrears at a fixed rate of 2.8 percent per annum,
- \$450 million, due 2023, paying interest semi-annually in arrears at a fixed rate of 3.375 percent per annum, and
- \$750 million, due 2028, paying interest semi-annually in arrears at a fixed rate of 3.8 percent per annum.

The aggregate net proceeds of these bond issues, after underwriting discount and other fees, amounted to \$1,494 million.

Subsequent events

In February 2019, the Company issued the following notes with a principal of:

- CHF 280 million, due 2024, paying interest annually in arrears at a fixed rate of 0.3 percent per annum, and
- CHF 170 million, due 2029, paying interest annually in arrears at a fixed rate of 1.0 percent per annum.

The aggregate net proceeds of these bond issues, after underwriting discount and other fees, amounted to CHF 449 million (equivalent to approximately \$449 million on date of issuance).

In addition, as at February 27, 2019, the amount outstanding under the \$2 billion program in the United States increased to \$794 million from \$292 million at December 31, 2018. There was no significant change in the Euro-commercial \$2 billion program.

Note 10

Employee benefits

The Company operates defined benefit pension plans, defined contribution pension plans, and termination indemnity plans, in accordance with local regulations and practices. These plans cover a large portion of the Company's employees and provide benefits to employees in the event of death, disability, retirement, or termination of employment. Certain of these plans are multi-employer plans. The Company also operates other postretirement benefit plans including postretirement health care benefits, and other employee-related benefits for active employees including long-service award plans. The measurement date used for the Company's employee benefit plans is December 31. The funding policies of the Company's plans are consistent with the local government and tax requirements.

The following tables include amounts relating to defined benefit pension plans and other postretirement benefits for both continuing and discontinued operations.

Net periodic benefit cost of the Company's defined benefit pension and other postretirement benefit plans consisted of the following:

(\$ in millions)	Defined pension benefits				Other postretirement benefits	
	Switzerland		International		2018	2017
	2018	2017	2018	2017		
Year ended December 31,						
Operational pension cost:						
Service cost	92	106	122	122	1	1
Operational pension cost	92	106	122	122	1	1
Non-operational pension cost (credit):						
Interest cost	30	41	198	208	4	5
Expected return on plan assets	(117)	(112)	(305)	(295)	-	-
Amortization of prior service cost (credit)	(15)	10	1	1	(5)	(5)
Amortization of net actuarial loss	-	-	92	91	(1)	(1)
Curtailments, settlements and special termination benefits	-	-	23	16	-	(1)
Non-operational pension cost (credit)	(102)	(61)	9	21	(2)	(2)
Net periodic benefit cost	(10)	45	131	143	(1)	(1)

(\$ in millions)	Defined pension benefits				Other postretirement benefits	
	Switzerland		International		2018	2017
	2018	2017	2018	2017		
Three months ended December 31,						
Operational pension cost:						
Service cost	22	21	33	29	1	-
Operational pension cost	22	21	33	29	1	-
Non-operational pension cost (credit):						
Interest cost	8	9	52	47	1	2
Expected return on plan assets	(27)	(27)	(79)	(69)	-	-
Amortization of prior service cost (credit)	(3)	(3)	-	-	(2)	(2)
Amortization of net actuarial loss	-	-	20	22	-	-
Curtailments, settlements and special termination benefits	-	-	22	14	-	(1)
Non-operational pension cost (credit)	(22)	(21)	15	14	(1)	(1)
Net periodic benefit cost	-	-	48	43	-	(1)

The components of net periodic benefit cost other than the service cost component are included in the line "Non-operational pension (cost) credit" in the income statement. Net periodic benefit cost includes \$45 million and \$55 million, for the year end December 31, 2018 and 2017, respectively, and \$11 million and \$14 million, for the three months end December 31, 2018 and 2017, respectively, related to discontinued operations.

Employer contributions were as follows:

(\$ in millions)	Defined pension benefits				Other postretirement benefits	
	Switzerland		International			
	2018	2017	2018	2017	2018	2017
Year ended December 31,						
Total contributions to defined benefit pension and other postretirement benefit plans	89	90	152	139	11	11
Of which, discretionary contributions to defined benefit pension plans	–	–	25	15	–	–

(\$ in millions)	Defined pension benefits				Other postretirement benefits	
	Switzerland		International			
	2018	2017	2018	2017	2018	2017
Three months ended December 31,						
Total contributions to defined benefit pension and other postretirement benefit plans	21	24	68	60	5	4
Of which, discretionary contributions to defined benefit pension plans	–	–	15	15	–	–

During the year and three months ended December 31, 2018, total contributions included available-for-sale debt securities, having a fair value at the contribution date of \$31 million, contributed to certain of the Company's pension plans in Germany and the United Kingdom. During the year and three months ended December 31, 2017, total contributions included available-for-sale debt securities, having a fair value at the contribution date of \$31 million, contributed to certain of the Company's pension plans in Germany and the United Kingdom.

Note 11 Stockholders' equity

In 2018 the Company purchased on the open market an aggregate of 10 million of its own shares resulting in an increase in Treasury stock of \$249 million. Also in 2018 the Company delivered, out of treasury stock, 2.4 million shares for options exercised in connection with its Management Incentive Plan.

At the Annual General Meeting of Shareholders on March 29, 2018, shareholders approved the proposal of the Board of Directors to distribute 0.78 Swiss francs per share to shareholders. The declared dividend amounted to \$1,736 million and was paid in April 2018.

Note 12

Earnings per share

Basic earnings per share is calculated by dividing income by the weighted-average number of shares outstanding during the period. Diluted earnings per share is calculated by dividing income by the weighted-average number of shares outstanding during the period, assuming that all potentially dilutive securities were exercised, if dilutive. Potentially dilutive securities comprise outstanding written call options, and outstanding options and shares granted subject to certain conditions under the Company's share-based payment arrangements.

Basic earnings per share

(\$ in millions, except per share data in \$)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Amounts attributable to ABB shareholders:				
Income from continuing operations, net of tax	1,514	1,441	204	204
Income from discontinued operations, net of tax	659	772	113	189
Net income	2,173	2,213	317	393
Weighted-average number of shares outstanding (in millions)	2,132	2,138	2,132	2,136
Basic earnings per share attributable to ABB shareholders:				
Income from continuing operations, net of tax	0.71	0.67	0.10	0.10
Income from discontinued operations, net of tax	0.31	0.36	0.05	0.09
Net income	1.02	1.04	0.15	0.18

Diluted earnings per share

(\$ in millions, except per share data in \$)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Amounts attributable to ABB shareholders:				
Income from continuing operations, net of tax	1,514	1,441	204	204
Income from discontinued operations, net of tax	659	772	113	189
Net income	2,173	2,213	317	393
Weighted-average number of shares outstanding (in millions)	2,132	2,138	2,132	2,136
Effect of dilutive securities:				
Call options and shares	7	10	2	14
Adjusted weighted-average number of shares outstanding (in millions)	2,139	2,148	2,134	2,150
Diluted earnings per share attributable to ABB shareholders:				
Income from continuing operations, net of tax	0.71	0.67	0.10	0.09
Income from discontinued operations, net of tax	0.31	0.36	0.05	0.09
Net income	1.02	1.03	0.15	0.18

Note 13

Reclassifications out of accumulated other comprehensive loss

The following table shows changes in "Accumulated other comprehensive loss" (OCI) attributable to ABB, by component, net of tax:

(\$ in millions)	Foreign currency translation adjustments	Unrealized gains (losses) on available-for-sale securities	Pension and other postretirement plan adjustments	Unrealized gains (losses) of cash flow hedge derivatives	Total OCI
Balance at January 1, 2017	(3,592)	7	(1,601)	(1)	(5,187)
Other comprehensive (loss) income:					
Other comprehensive (loss) income before reclassifications	912	1	(155)	38	796
Amounts reclassified from OCI	-	-	78	(22)	56
Changes attributable to divestments ⁽¹⁾	12	-	6	(3)	15
Total other comprehensive (loss) income	924	1	(71)	13	867
Less:					
Amounts attributable to noncontrolling interests	25	-	-	-	25
Balance at December 31, 2017	(2,693)	8	(1,672)	12	(4,345)
Cumulative effect of changes in accounting principles ⁽²⁾	-	(9)	-	-	(9)
Other comprehensive (loss) income:					
Other comprehensive (loss) income before reclassifications	(627)	(4)	(359)	(49)	(1,039)
Amounts reclassified from OCI	(31)	1	64	21	55
Changes attributable to divestments	12	-	-	-	12
Total other comprehensive (loss) income	(646)	(3)	(295)	(28)	(972)
Less:					
Amounts attributable to noncontrolling interests	(15)	-	-	-	(15)
Balance at December 31, 2018	(3,324)	(4)	(1,967)	(16)	(5,311)

(1) Changes attributable to divestments are included in the computation of the net gain or loss on sale of businesses (see Note 3).

(2) See "Applicable for current periods" section of Note 2 for more details.

The following table reflects amounts reclassified out of OCI in respect of Foreign currency translation adjustments and Pension and other postretirement plan adjustments:

(\$ in millions)	Location of (gains) losses reclassified from OCI	Year ended December 31,		Three months ended December 31,	
		2018	2017	2018	2017
Details about OCI components					
Foreign currency translation adjustments:					
Gain on liquidation of foreign subsidiary	Other income (expense), net	(31)	-	-	-
Pension and other postretirement plan adjustments:					
Amortization of prior service cost (credit)	Non-operational pension (cost) credit ⁽¹⁾	(19)	6	(5)	(5)
Amortization of net actuarial loss	Non-operational pension (cost) credit ⁽¹⁾	91	90	20	22
Net losses from pension settlements	Non-operational pension (cost) credit ⁽¹⁾	23	13	23	13
Total before tax		95	109	38	30
Tax	Provision for taxes	(31)	(31)	(15)	(12)
Amounts reclassified from OCI		64	78	23	18

(1) Amounts include a total of \$12 million and \$9 million, for the year end December 31, 2018 and 2017, respectively, and \$2 million and \$4 million, for the three months end December 31, 2018 and 2017, respectively, reclassified from OCI to Income from discontinued operations (see Note 3).

The amounts in respect of Unrealized gains (losses) on available-for-sale securities and Unrealized gains (losses) of cash flow hedge derivatives were not significant for the year and three months ended December 31, 2018 and 2017.

Note 14

Restructuring and related expenses

White Collar Productivity program

From September 2015 to December 2017, the Company executed a restructuring program to make the Company leaner, faster and more customer-focused. The program involved the rapid expansion and use of regional shared service centers as well as a streamlining of global operations and head office functions, with business units moving closer to their respective key markets. The program involved various restructuring initiatives across all operating segments and regions.

As of December 31, 2017, the Company had incurred substantially all costs related to the White Collar Productivity program.

Liabilities associated with the White Collar Productivity program are primarily included in "Other provisions". The following table shows the activity from the beginning of the program to December 31, 2018, by expense type.

(\$ in millions)	Employee severance costs	Contract settlement, loss order and other costs	Total
Liability at January 1, 2015	–	–	–
Expenses	300	3	303
Cash payments	(27)	–	(27)
Liability at December 31, 2015	273	3	276
Expenses	182	3	185
Cash payments	(91)	(2)	(93)
Change in estimates	(85)	(1)	(86)
Exchange rate differences	(17)	(1)	(18)
Liability at December 31, 2016	262	2	264
Expenses	28	3	31
Cash payments	(92)	(4)	(96)
Change in estimates	(118)	–	(118)
Exchange rate differences	21	–	21
Liability at December 31, 2017	101	1	102
Cash payments	(55)	–	(55)
Change in estimates and exchange rate differences	(13)	–	(13)
Liability at December 31, 2018	33	1	34

The change in estimates during 2017 of \$118 million, is mainly due to higher than expected rates of attrition and internal re-deployment. The decrease in the liability was recorded in Income from operations, primarily as reductions in Cost of sales of \$53 million and in Selling, general and administrative expenses of \$55 million. During the three months ended December 31, 2017, the change in estimates of \$29 million, related to restructuring activities initiated in both 2015 and 2016, was recorded primarily as reductions in Cost of sales of \$11 million and in Selling, general and administrative expenses of \$17 million.

The change in estimates during 2016 of \$86 million is due to significantly higher than expected rates of attrition and internal re-deployment and a lower than expected severance cost per employee for the employee groups affected by the first phase of restructuring initiated in 2015.

The following table outlines the net costs incurred in the year and three months ended December 31, 2017, and the cumulative net costs incurred to December 31, 2017:

(\$ in millions)	Net cost incurred Year ended December 31, 2017 ⁽¹⁾	Net cost incurred Three months ended December 31, 2017 ⁽¹⁾	Cumulative net cost incurred up to December 31, 2017 ⁽¹⁾
Electrification Products	(17)	(6)	72
Industrial Automation	(23)	(4)	106
Robotics and Motion	(14)	(4)	56
Corporate and Other	(32)	(5)	91
Total	(86)	(19)	325

(1) Net costs incurred in 2017 and Cumulative net costs incurred up to December 31, 2017, have been recast to reflect the reorganization of the Company's operating segments as outlined in Note 15.

The Company recorded the following expenses, net of changes in estimates, under this program:

(\$ in millions)	Year ended	Three months ended	Cumulative costs
	December 31, 2017 ⁽¹⁾	December 31, 2017 ⁽²⁾	incurred up to December 31, 2017
Employee severance costs	(90)	(21)	307
Estimated contract settlement, loss order and other costs	3	2	8
Inventory and long-lived asset impairments	1	–	10
Total	(86)	(19)	325

(1) Of which \$47 million was recorded in Total cost of sales and \$35 million in Selling, general and administrative expenses.

(2) Of which \$11 million was recorded in Total cost of sales and \$7 million in Selling, general and administrative expenses.

OS program

In December 2018, the Company announced a two-year restructuring program with the objective of simplifying its business model and structure through the implementation of a new organizational structure driven by its businesses. The program includes the elimination of the country and regional structures within the current matrix organization, including the elimination of the three regional Executive Committee roles. The operating businesses will each be responsible for both their customer-facing activities and business support functions, while the remaining Group-level corporate activities will primarily focus on Group strategy, portfolio and performance management, capital allocation, core technologies and the ABB Ability™ platform. The program is expected to be performed over two years and incur restructuring expenses of \$350 million.

The following table outlines the costs incurred in the year and three months ended December 31, 2018, the cumulative costs incurred up to December 31, 2018, and the total amount of costs expected to be incurred under the program per operating segment:

(\$ in millions)	Cost incurred	Cost incurred	Cumulative net	Total
	Year ended December 31, 2018	Three months ended December 31, 2018	cost incurred up to December 31, 2018	Expected Costs
Electrification Products	32	32	32	40
Industrial Automation	21	21	21	60
Robotics and Motion	1	1	1	50
Corporate and Other	11	11	11	200
Total	65	65	65	350

In the year and three months ended December 31, 2018, restructuring expenses recorded for this program relate to employee severance costs and are included in the following line items in the Consolidated Income Statements:

(\$ in millions)	Year ended	Three months ended
	December 31, 2018	December 31, 2018
Total cost of sales	35	35
Selling, general and administrative expenses	23	23
Non-order related research and development expenses	3	3
Other income (expense), net	4	4
Total	65	65

At December 31, 2018, liabilities associated with the program amount to \$65 million and are primarily included in “Other provisions”.

Other restructuring-related activities

In the year ended December 31, 2018 and 2017, the Company executed various other restructuring-related activities and incurred expenses of \$116 million and \$181 million, respectively. In the three months ended December 31, 2018 and 2017, expenses relating to these various other restructuring-related activities amounted to \$65 million and \$74 million, respectively. These expenses mainly relate to employee severance costs and are primarily recorded in:

(\$ in millions)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Total cost of sales	24	119	14	51
Selling, general and administrative expenses	52	10	34	5
Non-order related research and development expenses	2	–	2	–
Other income (expenses), net	38	52	15	18
Total	116	181	65	74

Note 15

Operating segment data

The Chief Operating Decision Maker (CODM) is the Chief Executive Officer. The CODM allocates resources to and assesses the performance of each operating segment using the information outlined below. The Company is organized into operating segments based on products and services and the operating segments consist of Electrification Products, Industrial Automation, and Robotics and Motion. The remaining operations of the Company are included in Corporate and Other. Following the announcement in December 2018, to sell its Powers Grids business, the Company reclassified the results of operations for this business and certain related amounts previously included in Corporate and Other to discontinued operations (See Note 3).

Effective January 1, 2018, management responsibility and oversight of certain remaining engineering, procurement and construction (EPC) businesses, previously included in the Industrial Automation and Robotics and Motion operating segments and the former Power Grids business, were transferred to a new non-core operating business within Corporate and Other. In addition, the results of certain divested businesses, which prior to their divestment in March 2018, were included within the Industrial Automation segment have been reclassified to Corporate and Other for all periods presented. In addition, during 2018, the Company changed the presentation of Cash and cash equivalents within the reported total segment assets such that all amounts are now considered as part of Corporate and other.

The segment information for the year and three months ended December 31, 2018 and at December 31, 2017, has been recast to reflect these changes.

A description of the types of products and services provided by each reportable segment is as follows:

- **Electrification Products:** manufactures and sells products and solutions which are designed to provide smarter and safer electrical flow from the substation to the socket. The portfolio of increasingly digital and connected solutions includes electric vehicle charging infrastructure, solar power solutions, modular substation packages, distribution automation products, switchboard and panelboards, switchgear, UPS solutions, circuit breakers, measuring and sensing devices, control products, wiring accessories, enclosures and cabling systems and intelligent home and building solutions, designed to integrate and automate lighting, heating, ventilation, security and data communication networks.
- **Industrial Automation:** develops and sells integrated automation and electrification systems and solutions, such as process and discrete control solutions, advanced process control software and manufacturing execution systems, sensing, measurement and analytical instrumentation and solutions, electric ship propulsion systems, as well as solutions for modern machine and factory automation and large turbochargers. In addition, the division offers a comprehensive range of services ranging from repair to advanced services such as remote monitoring, preventive maintenance and cybersecurity services.
- **Robotics and Motion:** manufactures and sells robotics, motors, generators, drives, wind converters, components and systems for railways and related services and digital solutions for a wide range of applications in industry, transportation and infrastructure, and utilities.
- **Corporate and Other:** includes headquarters, central research and development, the Company's real estate activities, Group Treasury Operations, non-core operating activities, historical operating activities of certain divested businesses and other minor business activities.

The Company evaluates the profitability of its segments based on Operational EBITA, which represents income from operations excluding:

- amortization expense on intangibles arising upon acquisitions (acquisition-related amortization),
- restructuring and restructuring-related expenses,
- changes in the amount recorded for obligations related to divested businesses occurring after the divestment date (changes in obligations related to divested businesses),
- changes in estimates relating to opening balance sheets of acquired businesses (changes in pre-acquisition estimates),
- gains and losses from sale of businesses,
- acquisition- and divestment-related expenses and integration costs,
- certain other non-operational items, as well as
- foreign exchange/commodity timing differences in income from operations consisting of: (a) unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives), (b) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (c) unrealized foreign exchange movements on receivables/payables (and related assets/liabilities).

Certain other non-operational items generally includes: certain regulatory, compliance and legal costs, certain asset write downs/impairments as well as other items which are determined by management on a case-by-case basis.

The CODM primarily reviews the results of each segment on a basis that is before the elimination of profits made on inventory sales between segments. Segment results below are presented before these eliminations, with a total deduction for intersegment profits to arrive at the Company's consolidated Operational EBITA. Intersegment sales and transfers are accounted for as if the sales and transfers were to third parties, at current market prices.

The following tables present disaggregated segment revenues from contracts with customers, Operational EBITA, and the reconciliations of consolidated Operational EBITA to Income from continuing operations before taxes for the year and three months ended December 31, 2018 and 2017, as well as total assets at December 31, 2018 and 2017.

(\$ in millions)	Year ended December 31, 2018				Total
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other	
Geographical markets					
Europe	3,881	3,145	2,929	58	10,013
The Americas	3,650	1,544	2,788	21	8,003
Asia, Middle East and Africa	3,680	2,565	2,922	236	9,403
	11,211	7,254	8,639	315	27,419
End Customer Markets					
Utilities	2,452	1,168	749	176	4,545
Industry	4,395	4,447	6,529	98	15,469
Transport & infrastructure	4,364	1,639	1,361	41	7,405
	11,211	7,254	8,639	315	27,419
Product type					
Products	9,679	2,391	6,206	118	18,394
Systems	617	1,853	1,062	197	3,729
Services and other	915	3,010	1,371	-	5,296
	11,211	7,254	8,639	315	27,419
Third-party revenues	11,211	7,254	8,639	315	27,419
Intersegment revenues ⁽¹⁾	475	140	508	(880)	243
Total Revenues	11,686	7,394	9,147	(565)	27,662

(\$ in millions)	Year ended December 31, 2017				Total
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other	
Geographical markets					
Europe	3,514	2,773	2,613	132	9,032
The Americas	2,613	1,381	2,721	116	6,831
Asia, Middle East and Africa	3,464	2,570	2,543	493	9,070
	9,591	6,724	7,877	741	24,933
End Customer Markets					
Utilities	2,597	1,270	633	575	5,075
Industry	4,022	3,796	5,991	155	13,964
Transport & infrastructure	2,972	1,658	1,253	11	5,894
	9,591	6,724	7,877	741	24,933
Product type					
Products	8,322	1,796	5,661	169	15,948
Systems	614	2,089	959	565	4,227
Services and other	655	2,839	1,257	7	4,758
	9,591	6,724	7,877	741	24,933
Third-party revenues	9,591	6,724	7,877	741	24,933
Intersegment revenues ⁽¹⁾	503	155	519	(914)	263
Total Revenues	10,094	6,879	8,396	(173)	25,196

(\$ in millions)	Three months ended December 31, 2018				Total
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other	
Geographical markets					
Europe	1,048	825	786	(9)	2,650
The Americas	1,184	388	684	(12)	2,244
Asia, Middle East and Africa	970	688	733	48	2,439
	3,202	1,901	2,203	27	7,333
End Customer Markets					
Utilities	257	313	206	5	781
Industry	1,116	1,186	1,659	28	3,989
Transport & infrastructure	1,829	402	338	(6)	2,563
	3,202	1,901	2,203	27	7,333
Product type					
Products	2,714	616	1,567	55	4,952
Systems	180	446	276	(28)	874
Services and other	308	839	360	-	1,507
	3,202	1,901	2,203	27	7,333
Third-party revenues	3,202	1,901	2,203	27	7,333
Intersegment revenues ⁽¹⁾	118	37	138	(231)	62
Total Revenues	3,320	1,938	2,341	(204)	7,395

(\$ in millions)	Three months ended December 31, 2017				Total
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other	
Geographical markets					
Europe	949	837	718	8	2,512
The Americas	650	416	670	22	1,758
Asia, Middle East and Africa	947	714	679	113	2,453
	2,546	1,967	2,067	143	6,723
End Customer Markets					
Utilities	634	339	168	123	1,264
Industry	1,068	1,166	1,650	31	3,915
Transport & infrastructure	844	462	249	(11)	1,544
	2,546	1,967	2,067	143	6,723
Product type					
Products	2,182	599	1,471	97	4,349
Systems	174	520	241	46	981
Services and other	190	848	355	-	1,393
	2,546	1,967	2,067	143	6,723
Third-party revenues	2,546	1,967	2,067	143	6,723
Intersegment revenues ⁽¹⁾	150	44	130	(243)	81
Total Revenues	2,696	2,011	2,197	(100)	6,804

(1) Intersegment revenues include sales to the Power Grids business which is presented as discontinued operations and are not eliminated from Total revenues.

(\$ in millions)	Year ended		Three months ended	
	December 31,		December 31,	
	2018	2017	2018	2017
Operational EBITA:				
Electrification Products	1,626	1,510	388	398
Industrial Automation	1,019	953	251	299
Robotics and Motion	1,447	1,260	349	303
Corporate and Other:				
– Non-core and divested businesses	(291)	(163)	(194)	(138)
– Stranded corporate costs	(297)	(286)	(72)	(73)
– Corporate costs and Other Intersegment elimination	(499)	(457)	(138)	(125)
Consolidated Operational EBITA	3,005	2,817	584	664
Acquisition-related amortization	(273)	(229)	(75)	(65)
Restructuring and restructuring-related expenses ⁽¹⁾	(172)	(300)	(129)	(108)
Changes in obligations related to divested businesses	(106)	(94)	(14)	–
Changes in pre-acquisition estimates	(8)	(8)	(6)	(8)
Gains and losses from sale of businesses	57	252	(4)	(78)
Acquisition- and divestment-related expenses and integration costs	(204)	(81)	(56)	(41)
Foreign exchange/commodity timing differences in income from operations:				
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	(1)	56	(2)	(3)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	(23)	8	(12)	–
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(9)	(30)	14	(9)
Certain other non-operational items:				
Regulatory, compliance and legal costs	(34)	(102)	(5)	(11)
Asset write downs/ impairments	(25)	–	(13)	–
Losses and other (costs) recoveries on Korea fraud	–	(40)	8	(7)
Other non-operational items	19	(19)	(15)	(10)
Income from operations	2,226	2,230	275	324
Interest and dividend income	72	73	11	20
Interest and other finance expense	(262)	(234)	(66)	(45)
Non-operational pension (cost) credit	83	33	6	4
Income from continuing operations before taxes	2,119	2,102	226	303

(1) Amounts in 2017 also include the incremental implementation costs in relation to the White Collar Productivity program.

(\$ in millions)	Total assets ^{(1), (2)}	
	December 31, 2018	December 31, 2017
Electrification Products	12,049	8,881
Industrial Automation	6,669	6,961
Robotics and Motion	8,397	8,416
Corporate and Other	17,326	19,200
Consolidated	44,441	43,458

(1) Total assets are after intersegment eliminations and therefore reflect third-party assets only.

(2) Assets held for sale of \$8,591 million and \$8,603 million are included in Corporate and Other at December 31, 2018 and 2017, respectively (see Note 3).

2019 Realignment of segments

On December 17, 2018, the Company announced a reorganization of its operating segments into four customer-focused, entrepreneurial businesses. With effect from April 1, 2019:

- the Electrification Products segment will be renamed the Electrification segment,
- the Industrial Automation segment will remain unchanged except that it will now exclude the Machine and Factory Automation business, which will be transferred to the new Robotics and Discrete Automation segment,
- the new Robotics and Discrete Automation segment will include the combined businesses of the Machine and Factory Automation business, previously included in the Industrial Automation segment, and the Robotics business from the former Robotics and Motion segment, and
- the new Motion segment will contain the remaining businesses of the former Robotics and Motion segment.

Supplemental Reconciliations and Definitions

The following reconciliations and definitions include measures which ABB uses to supplement its Consolidated Financial Information (unaudited) which is prepared in accordance with United States generally accepted accounting principles (U.S. GAAP). Certain of these financial measures are, or may be, considered non-GAAP financial measures as defined in the rules of the U.S. Securities and Exchange Commission (SEC).

While ABB's management believes that the non-GAAP financial measures herein are useful in evaluating ABB's operating results, this information should be considered as supplemental in nature and not as a substitute for the related financial information prepared in accordance with U.S. GAAP. Therefore these measures should not be viewed in isolation but considered together with the Consolidated Financial Information (unaudited) prepared in accordance with U.S. GAAP as of and for the year and three months ended December 31, 2018.

On January 1, 2018, the Company adopted a new accounting standard, Revenue from contracts with customers, and consistent with the method of adoption elected, comparative information has not been restated and continues to be reported under the accounting standards previously in effect for those periods (see Note 2 to the Consolidated Financial Information).

Comparable growth rates

Growth rates for certain key figures may be presented and discussed on a "comparable" basis. The comparable growth rate measures growth on a constant currency basis. Since we are a global company, the comparability of our operating results reported in U.S. dollars is affected by foreign currency exchange rate fluctuations. We calculate the impacts from foreign currency fluctuations by translating the current-year periods' reported key figures into U.S. dollar amounts using the exchange rates in effect for the comparable periods in the previous year.

Comparable growth rates are also adjusted for changes in our business portfolio. Adjustments to our business portfolio occur due to acquisitions, divestments, or by exiting specific business activities or customer markets. The adjustment for portfolio changes is calculated as follows: where the results of any business acquired or divested have not been consolidated and reported for the entire duration of both the current and comparable periods, the reported key figures of such business are adjusted to exclude the relevant key figures of any corresponding quarters which are not comparable when computing the comparable growth rate. Certain portfolio changes which do not qualify as divestments under U.S. GAAP have been treated in a similar manner to divestments. Changes in our portfolio where we have exited certain business activities or customer markets are adjusted as if the relevant business was divested in the period when the decision to cease business activities was taken. We do not adjust for portfolio changes where the relevant business has annualized revenues of less than \$50 million.

The following tables provide reconciliations of reported growth rates of certain key figures to their respective comparable growth rate.

Divisional comparable growth rate reconciliation

Division	Q4 2018 compared to Q4 2017							
	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification Products	23%	4%	-25%	2%	23%	5%	-25%	3%
Industrial Automation	4%	4%	0%	8%	-4%	4%	0%	0%
Robotics and Motion	7%	4%	0%	11%	7%	4%	0%	11%
ABB Group	10%	5%	-8%	7%	9%	4%	-8%	5%

Division	FY 2018 compared to FY 2017							
	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Electrification Products	17%	-1%	-12%	4%	16%	0%	-13%	3%
Industrial Automation	16%	-1%	-7%	8%	7%	0%	-6%	1%
Robotics and Motion	13%	-1%	0%	12%	9%	-1%	0%	8%
ABB Group	14%	0%	-6%	8%	10%	-1%	-5%	4%

Regional comparable growth rate reconciliation

Region	Q4 2018 compared to Q4 2017							
	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Europe	5%	4%	-5%	4%	5%	5%	-3%	7%
The Americas	32%	3%	-23%	12%	28%	3%	-25%	6%
Asia, Middle East and Africa	0%	5%	2%	7%	-1%	4%	0%	3%
ABB Group	10%	5%	-8%	7%	9%	4%	-8%	5%

Region	FY 2018 compared to FY 2017							
	Order growth rate				Revenue growth rate			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
Europe	17%	-3%	-4%	10%	11%	-2%	-5%	4%
The Americas	18%	1%	-12%	7%	17%	2%	-12%	7%
Asia, Middle East and Africa	9%	-1%	-2%	6%	4%	0%	0%	4%
ABB Group	14%	0%	-6%	8%	10%	0%	-5%	5%

Order backlog growth rate reconciliation

Division	December 31, 2018 compared to December 31, 2017			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
	Electrification Products	33%	6%	-32%
Industrial Automation	-3%	5%	0%	2%
Robotics and Motion	5%	5%	0%	10%
ABB Group	5%	5%	-4%	6%

Other growth rate reconciliations

	Q4 2018 compared to Q4 2017				FY 2018 compared to FY 2017			
	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable	US\$ (as reported)	Foreign exchange impact	Portfolio changes	Comparable
	Large orders	8%	3%	68%	79%	20%	-2%	27%
Base orders	10%	6%	-11%	5%	14%	-1%	-7%	6%
Service orders	7%	4%	-6%	5%	12%	-1%	-4%	7%
Service revenues	8%	4%	-8%	4%	11%	0%	-4%	7%

Comparable revenue growth rate reconciliation (rolling twelve months)

12 months ended:	US\$	Foreign exchange		Comparable
		impact	Portfolio changes	
December 31, 2017	1.1%	-0.2%	-0.5%	0.4%
March 31, 2018	4.6%	-0.5%	-2.6%	1.5%
June 30, 2018	7.8%	1.8%	-7.2%	2.4%
September 30, 2018	8.7%	-0.7%	-4.6%	3.4%
December 31, 2018	9.8%	-0.6%	-4.8%	4.4%

Operational EBITA margin

Definition

Operational EBITA margin

Operational EBITA margin is Operational EBITA as a percentage of Operational revenues.

Operational EBITA

Operational earnings before interest, taxes and acquisition-related amortization (Operational EBITA) represents Income from operations excluding:

- acquisition-related amortization (as defined below),
- restructuring and restructuring-related expenses,
- changes in the amount recorded for obligations related to divested businesses occurring after the divestment date (changes in obligations related to divested businesses),
- changes in estimates relating to opening balance sheets of acquired businesses (changes in pre-acquisition estimates),
- gains and losses from sale of businesses,
- acquisition- and divestment-related expenses and integration costs,
- certain other non-operational items, as well as
- foreign exchange/commodity timing differences in income from operations consisting of: (a) unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives), (b) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (c) unrealized foreign exchange movements on receivables/payables (and related assets/liabilities).

Certain other non-operational items generally includes: certain regulatory, compliance and legal costs, certain asset write downs/impairments as well as other items which are determined by management on a case-by-case basis.

Operational EBITA is our measure of segment profit but is also used by management to evaluate the profitability of the Company as a whole.

Acquisition-related amortization

Amortization expense on intangibles arising upon acquisitions.

Operational revenues

The Company presents Operational revenues solely for the purpose of allowing the computation of Operational EBITA margin. Operational revenues are total revenues adjusted for foreign exchange/commodity timing differences in total revenues of: (i) unrealized gains and losses on derivatives, (ii) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (iii) unrealized foreign exchange movements on receivables (and related assets). Operational revenues are not intended to be an alternative measure to Total Revenues, which represent our revenues measured in accordance with U.S. GAAP.

Reconciliation

The following tables provide reconciliations of consolidated Operational EBITA to Net Income and Operational EBITA Margin by division.

Reconciliation of consolidated Operational EBITA to Net Income

(\$ in millions)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Operational EBITA	3,005	2,817	584	664
Acquisition-related amortization	(273)	(229)	(75)	(65)
Restructuring and restructuring-related expenses ⁽¹⁾	(172)	(300)	(129)	(108)
Changes in obligations related to divested businesses	(106)	(94)	(14)	–
Changes in pre-acquisition estimates	(8)	(8)	(6)	(8)
Gains and losses from sale of businesses	57	252	(4)	(78)
Acquisition- and divestment-related expenses and integration costs	(204)	(81)	(56)	(41)
Certain other non-operational items	(40)	(161)	(25)	(28)
Foreign exchange/commodity timing differences in income from operations:				
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	(1)	56	(2)	(3)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	(23)	8	(12)	–
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(9)	(30)	14	(9)
Income from operations	2,226	2,230	275	324
Interest and dividend income	72	73	11	20
Interest and other finance expense	(262)	(234)	(66)	(45)
Non-operational pension (cost) credit	83	33	6	4
Income from continuing operations before taxes	2,119	2,102	226	303
Provision for taxes	(544)	(583)	(16)	(89)
Income from continuing operations, net of tax	1,575	1,519	210	214
Income from discontinued operations, net of tax	723	846	135	209
Net income	2,298	2,365	345	423

(1) Amounts in 2017 also include the incremental implementation costs in relation to the White Collar Productivity program.

Reconciliation of Operational EBITA margin by division

	Three months ended December 31, 2018				
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other and Intersegment elimination	Consolidated
(\$ in millions, unless otherwise indicated)					
Total revenues	3,320	1,938	2,341	(204)	7,395
Foreign exchange/commodity timing differences in total revenues:					
Unrealized gains and losses on derivatives	(4)	3	(18)	(4)	(23)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	-	5	(1)	5	9
Unrealized foreign exchange movements on receivables (and related assets)	8	(1)	2	(2)	7
Operational revenues	3,324	1,945	2,324	(205)	7,388
Income (loss) from operations	221	204	326	(476)	275
Acquisition-related amortization	35	20	15	5	75
Restructuring and restructuring-related expenses	76	31	8	14	129
Changes in obligations related to divested businesses	-	-	-	14	14
Changes in pre-acquisition estimates	17	(11)	-	-	6
Gains and losses from sale of businesses	-	-	4	-	4
Acquisition- and divestment-related expenses and integration costs	40	1	1	14	56
Certain other non-operational items	-	2	4	19	25
Foreign exchange/commodity timing differences in income from operations:					
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	-	7	(5)	-	2
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	-	6	-	6	12
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(1)	(9)	(4)	-	(14)
Operational EBITA	388	251	349	(404)	584
Operational EBITA margin (%)	11.7%	12.9%	15.0%	n.a.	7.9%

In the three months ended December 31, 2018, Certain other non-operational items in table above includes the following:

	Three months ended December 31, 2018				
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other	Consolidated
(\$ in millions, unless otherwise indicated)					
Certain other non-operational items:					
Regulatory, compliance and legal costs:	-	2	-	3	5
Asset write downs/impairments	-	-	-	13	13
Division transformation costs	-	-	3	7	10
Losses (recovery) on Korea fraud	-	-	-	(8)	(8)
Other non-operational items	-	-	1	4	5
Total	-	2	4	19	25

	Three months ended December 31, 2017				
	Electrification	Industrial	Robotics	Corporate and	
(\$ in millions, unless otherwise indicated)	Products	Automation	and Motion	Intersegment	Consolidated
				elimination	
Total revenues	2,696	2,011	2,197	(100)	6,804
Foreign exchange/commodity timing differences in total revenues:					
Unrealized gains and losses on derivatives	13	(7)	2	28	36
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	-	4	2	-	6
Unrealized foreign exchange movements on receivables (and related assets)	3	1	2	(1)	5
Operational revenues	2,712	2,009	2,203	(73)	6,851
Income (loss) from operations	318	214	247	(455)	324
Acquisition-related amortization	22	22	16	5	65
Restructuring and restructuring-related expenses ⁽¹⁾	17	36	35	20	108
Changes in pre-acquisition estimates	8	-	-	-	8
Gains and losses from sale of businesses	-	-	-	78	78
Acquisition- and divestment-related expenses and integration costs	12	27	2	-	41
Certain other non-operational items	8	-	-	20	28
Foreign exchange/commodity timing differences in income from operations:					
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	9	(4)	(1)	(1)	3
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	-	(2)	3	(1)	-
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	4	6	1	(2)	9
Operational EBITA	398	299	303	(336)	664
Operational EBITA margin (%)	14.7%	14.9%	13.8%	n.a.	9.7%

(1) Amounts in 2017 also include the incremental implementation costs in relation to the White Collar Productivity program.

In the three months ended December 31, 2017, Certain other non-operational items in table above includes the following:

	Three months ended December 31, 2017				
(\$ in millions, unless otherwise indicated)	Electrification	Industrial	Robotics	Corporate	
	Products	Automation	and Motion	and Other	Consolidated
Certain other non-operational items:					
Regulatory, compliance and legal costs	-	-	-	11	11
Losses (recovery) on Korea fraud	-	-	-	7	7
Other non-operational items	8	-	-	2	10
Total	8	-	-	20	28

	Year ended December 31, 2018				
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other and Intersegment elimination	Consolidated
(\$ in millions, unless otherwise indicated)					
Total revenues	11,686	7,394	9,147	(565)	27,662
Foreign exchange/commodity timing differences in total revenues:					
Unrealized gains and losses on derivatives	16	(12)	(10)	(6)	(12)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	3	17	-	-	20
Unrealized foreign exchange movements on receivables (and related assets)	(1)	(5)	-	(4)	(10)
Operational revenues	11,704	7,394	9,137	(575)	27,660
Income (loss) from operations	1,290	887	1,346	(1,297)	2,226
Acquisition-related amortization	106	86	63	18	273
Restructuring and restructuring-related expenses	98	35	21	18	172
Changes in obligations related to divested businesses	-	-	-	106	106
Changes in pre-acquisition estimates	19	(11)	-	-	8
Gains and losses from sale of businesses	(81)	3	4	17	(57)
Acquisition- and divestment-related expenses and integration costs	168	4	2	30	204
Certain other non-operational items	(2)	3	11	28	40
Foreign exchange/commodity timing differences in income from operations:					
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	27	(12)	(2)	(12)	1
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	3	18	-	2	23
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(2)	6	2	3	9
Operational EBITA	1,626	1,019	1,447	(1,087)	3,005
Operational EBITA margin (%)	13.9%	13.8%	15.8%	n.a.	10.9%

In the year ended December 31, 2018, Certain other non-operational items in table above includes the following:

	Year ended December 31, 2018				
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other	Consolidated
(\$ in millions, unless otherwise indicated)					
Certain other non-operational items:					
Regulatory, compliance and legal costs	-	3	-	31	34
Asset write downs/impairments	-	-	-	25	25
Division transformation costs	-	-	10	7	17
Gain on liquidation of a foreign subsidiary	-	-	-	(31)	(31)
Losses (recovery) on Korea fraud	-	-	-	(8)	(8)
Other non-operational items	(2)	-	1	4	3
Total	(2)	3	11	28	40

Year ended December 31, 2017					
	Electrification	Industrial	Robotics	Corporate and Other and Intersegment	Consolidated
(\$ in millions, unless otherwise indicated)	Products	Automation	and Motion	elimination	
Total revenues	10,094	6,879	8,396	(173)	25,196
Foreign exchange/commodity timing differences in total revenues:					
Unrealized gains and losses on derivatives	(23)	(42)	(4)	25	(44)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	-	(7)	4	1	(2)
Unrealized foreign exchange movements on receivables (and related assets)	12	17	3	(1)	31
Operational revenues	10,083	6,847	8,399	(148)	25,181
Income (loss) from operations	1,352	798	1,126	(1,046)	2,230
Acquisition-related amortization	98	47	66	18	229
Restructuring and restructuring-related expenses ⁽¹⁾	28	85	64	123	300
Changes in obligations related to divested businesses	-	-	-	94	94
Changes in pre-acquisition estimates	8	-	-	-	8
Gains and losses from sale of businesses	-	(2)	-	(250)	(252)
Acquisition- and divestment-related expenses and integration costs	23	52	2	4	81
Certain other non-operational items	21	1	-	139	161
Foreign exchange/commodity timing differences in income from operations:					
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	(27)	(40)	(10)	21	(56)
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	-	(9)	5	(4)	(8)
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	7	21	7	(5)	30
Operational EBITA	1,510	953	1,260	-906	2,817
Operational EBITA margin (%)	15.0%	13.9%	15.0%	n.a.	11.2%

(1) Amounts in 2017 also include the incremental implementation costs in relation to the White Collar Productivity program.

In the year ended December 31, 2017, Certain other non-operational items in table above includes the following:

Year ended December 31, 2017					
	Electrification	Industrial	Robotics	Corporate	Consolidated
(\$ in millions, unless otherwise indicated)	Products	Automation	and Motion	and Other	
Certain other non-operational items:					
Regulatory, compliance and legal costs	9	1	-	92	102
Losses (recovery) on Korea fraud	-	-	-	40	40
Other non-operational items	12	-	-	7	19
Total	21	1	-	139	161

	Year ended December 31, 2016				
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other and Intersegment elimination	Consolidated
(\$ in millions, unless otherwise indicated)					
Total revenues	9,920	6,654	7,888	467	24,929
Foreign exchange/commodity timing differences in total revenues:					
Unrealized gains and losses on derivatives	18	15	3	13	49
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	(6)	7	3	–	4
Unrealized foreign exchange movements on receivables (and related assets)	(10)	5	(1)	4	(2)
Operational revenues	9,922	6,681	7,893	484	24,980
Income (loss) from operations	1,094	772	1,048	(985)	1,929
Acquisition-related amortization	121	11	94	19	245
Restructuring and restructuring-related expenses ⁽¹⁾	93	76	69	204	442
Changes in obligations related to divested businesses	–	–	–	–	–
Changes in pre-acquisition estimates	131	–	–	–	131
Gains and losses from sale of businesses	–	–	–	10	10
Acquisition- and divestment-related expenses and integration costs	–	4	–	5	9
Certain other non-operational items	8	5	18	103	134
Foreign exchange/commodity timing differences in income from operations:					
Unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives)	21	14	–	(16)	19
Realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized	(4)	4	2	(1)	1
Unrealized foreign exchange movements on receivables/payables (and related assets/liabilities)	(5)	11	1	1	8
Operational EBITA	1,459	897	1,232	(660)	2,928
Operational EBITA margin (%)	14.7%	13.4%	15.6%	n.a.	11.7%

(1) Amounts in 2016 also include the incremental implementation costs in relation to the White Collar Productivity program.

In the year ended December 31, 2016, Certain other non-operational items in table above includes the following:

	Year ended December 31, 2016				
	Electrification Products	Industrial Automation	Robotics and Motion	Corporate and Other	Consolidated
(\$ in millions, unless otherwise indicated)					
Certain other non-operational items:					
Regulatory, compliance and legal costs	–	–	–	10	10
Asset write downs/impairments	–	5	–	11	16
Losses (recovery) on Korea fraud	–	–	–	73	73
Corporate re-branding and marketing costs	–	–	–	30	30
Gain on FX derivative relating to a divestment	–	–	–	(22)	(22)
Other non-operational items	8	–	18	1	27
Total	8	5	18	103	134

Operational EPS

Definition

Operational EPS

Operational EPS is calculated as Operational net income divided by the weighted-average number of shares outstanding used in determining basic earnings per share.

Operational net income

Operational net income is calculated as Net income attributable to ABB adjusted for the following:

- (i) acquisition-related amortization,
- (ii) restructuring and restructuring-related expenses,
- (iii) non-operational pension cost (credit),
- (iv) changes in obligations related to divested businesses,
- (v) changes in pre-acquisition estimates,
- (vi) gains and losses from sale of businesses,
- (vii) acquisition- and divestment-related expenses and integration costs,
- (viii) certain other non-operational items,
- (ix) foreign exchange/commodity timing differences in income from operations consisting of: (a) unrealized gains and losses on derivatives (foreign exchange, commodities, embedded derivatives), (b) realized gains and losses on derivatives where the underlying hedged transaction has not yet been realized, and (c) unrealized foreign exchange movements on receivables/payables (and related assets/liabilities), and
- (x) The amount of income tax on operational adjustments either estimated using the Adjusted Group effective tax rate or in certain specific cases, computed using the actual income tax effects of the relevant item in (i) to (viii) above.

Acquisition-related amortization

Amortization expense on intangibles arising upon acquisitions.

Adjusted Group effective tax rate

The Adjusted Group effective tax rate is computed by dividing an adjusted provision for taxes by an adjusted income from continuing operations before taxes. Certain amounts recorded in income from continuing operations before taxes and the related provision for taxes (primarily gains and losses from sale of businesses) are excluded from the computation.

Constant currency Operational EPS adjustment and Operational EPS growth rate (constant currency)

In connection with ABB's 2015-2020 targets, Operational EPS growth is measured assuming 2014 as the base year and uses constant exchange rates. We compute the constant currency operational net income for all periods using the relevant monthly exchange rates which were in effect during 2014 and any difference in computed Operational net income is divided by the relevant weighted-average number of shares outstanding to identify the constant currency Operational EPS adjustment.

Reconciliation

(\$ in millions, except per share data in \$)	Year ended December 31,		
	2018	2017	Growth ⁽³⁾
Net income (attributable to ABB)	2,173	2,213	
Operational adjustments:			
Acquisition-related amortization	273	229	
Restructuring and restructuring-related expenses ⁽¹⁾	172	300	
Non-operational pension cost (credit)	(83)	(33)	
Changes in obligations related to divested businesses	106	94	
Changes in pre-acquisition estimates	8	8	
Gains and losses from sale of businesses	(57)	(252)	
Acquisition- and divestment-related expenses and integration costs	204	81	
Certain other non-operational items	40	161	
FX/commodity timing differences in income from operations	33	(34)	
Operational adjustments in discontinued operations	209	142	
Tax on operational adjustments ⁽²⁾	(240)	(242)	
Operational net income	2,838	2,667	6%
Weighted-average number of shares outstanding (in millions)	2,132	2,138	
Operational EPS	1.33	1.25	7%
Constant currency Operational EPS adjustment	0.17	0.14	
Operational EPS (constant currency basis - 2014 exchange rates)	1.50	1.39	8%

(\$ in millions, except per share data in \$)	Three months ended December 31,		
	2018	2017	Growth ⁽³⁾
Net income (attributable to ABB)	317	393	
Operational adjustments:			
Acquisition-related amortization	75	65	
Restructuring and restructuring-related expenses ⁽¹⁾	129	108	
Non-operational pension cost (credit)	(6)	(4)	
Changes in obligations related to divested businesses	14	–	
Changes in pre-acquisition estimates	6	8	
Gains and losses from sale of businesses	4	78	
Acquisition- and divestment-related expenses and integration costs	56	41	
Certain other non-operational items	25	28	
FX/commodity timing differences in income from operations	–	12	
Operational adjustments in discontinued operations	108	74	
Tax on operational adjustments ⁽²⁾	(96)	(105)	
Operational net income	632	698	-10%
Weighted-average number of shares outstanding (in millions)	2,132	2,136	
Operational EPS	0.30	0.33	-9%
Constant currency Operational EPS adjustment	0.03	0.02	
Operational EPS (constant currency basis - 2014 exchange rates)	0.33	0.35	-6%

(1) Amounts in 2017 also include the incremental implementation costs in relation to the White Collar Productivity program.

(2) Tax amount is computed by applying the Adjusted Group effective tax rate to the operational adjustments, except for gains and losses from sale of businesses for which the actual provision for taxes resulting from the gain or loss has been computed.

(3) Growth is computed using unrounded EPS amounts.

Net debt

Definition

Net debt

Net debt is defined as Total debt less Cash and marketable securities.

Total debt

Total debt is the sum of Short-term debt and current maturities of long-term debt, and Long-term debt.

Cash and marketable securities

Cash and marketable securities is the sum of Cash and equivalents, and Marketable securities and short-term investments.

Reconciliation

(\$ in millions)	December 31,		
	2018	2017	2016
Short-term debt and current maturities of long-term debt	2,031	726	998
Long-term debt	6,587	6,682	5,785
Total debt	8,618	7,408	6,783
Cash and equivalents	3,445	4,526	3,644
Marketable securities and short-term investments	712	1,083	1,953
Cash and marketable securities	4,157	5,609	5,597
Net debt	4,461	1,799	1,186

Net working capital as a percentage of revenues

Definition

Net working capital as a percentage of revenues

Net working capital as a percentage of revenues is calculated as Net working capital divided by Adjusted revenues for the trailing twelve months.

Net working capital

Net working capital is the sum of (i) receivables, net, (ii) contract assets, (iii) inventories, net, and (iv) prepaid expenses; less (v) accounts payable, trade, (vi) contract liabilities, and (vi) other current liabilities (excluding primarily: (a) income taxes payable, (b) current derivative liabilities, (c) pension and other employee benefits, and (d) payables under the share buyback program); and including the amounts related to these accounts which have been presented as either assets or liabilities held for sale.

Adjusted revenues for the trailing twelve months

Adjusted revenues for the trailing twelve months includes total revenues recorded by ABB in the twelve months preceding the relevant balance sheet date adjusted to eliminate revenues of divested businesses and the estimated impact of annualizing revenues of certain acquisitions which were completed in the same trailing twelve-month period.

Reconciliation

(\$ in millions, unless otherwise indicated)	December 31,		
	2018	2017	2016
Net working capital:			
Receivables, net	6,386	5,861	5,291
Contract assets	1,082	1,141	1,222
Inventories, net	4,284	3,737	3,172
Prepaid expenses	176	159	141
Accounts payable, trade	(4,424)	(3,736)	(3,045)
Contract liabilities	(1,707)	(1,792)	(1,690)
Other current liabilities ⁽¹⁾	(3,213)	(2,880)	(2,475)
Net working capital	2,584	2,490	2,616
Total revenues for the twelve months ended	27,662	25,196	24,929
Adjustment to annualize/eliminate revenues of certain acquisitions/divestments	1,030	178	–
Adjusted revenues for the trailing twelve months	28,692	25,374	24,929
Net working capital as a percentage of revenues (%)	9.0%	9.8%	10.5%

(1) Amounts exclude \$567 million, \$629 million and \$660 million at December 31, 2018, 2017 and 2016, respectively, related primarily to (a) income taxes payable, (b) current derivative liabilities, and (c) pension and other employee benefits.

Free cash flow conversion to net income

Definition

Free cash flow conversion to net income

Free cash flow conversion to net income is calculated as adjusted free cash flow divided by Net income attributable to ABB.

Adjusted free cash flow

Adjusted free cash flow is calculated as net cash provided by operating activities adjusted for: (i) purchases of property, plant and equipment and intangible assets, (ii) proceeds from sales of property, plant and equipment, and (iii) changes in financing and other non-current receivables, net (included in other investing activities).

Reconciliation

(\$ in millions, unless otherwise indicated)	Year ended December 31,		
	2018	2017	2016
Net cash provided by operating activities	2,924	3,799	3,843
Adjusted for the effects of:			
<i>Continuing operations</i>			
Purchases of property, plant and equipment and intangible assets	(772)	(752)	(632)
Proceeds from sale of property, plant and equipment	72	61	59
Changes in financing receivables and other non-current receivables	(8)	8	(13)
<i>Discontinued operations</i>			
Purchases of property, plant and equipment and intangible assets	(201)	(197)	(199)
Proceeds from sale of property, plant and equipment	8	5	2
Changes in financing receivables and other non-current receivables	1	2	5
Adjusted free cash flow	2,024	2,926	3,065
Net income attributable to ABB	2,173	2,213	1,899
Free cash flow conversion to net income	93%	132%	161%

Finance net

Definition

Finance net is calculated as Interest and dividend income less Interest and other finance expense.

Reconciliation

(\$ in millions)	Year ended December 31,		Three months ended December 31,	
	2018	2017	2018	2017
Interest and dividend income	72	73	11	20
Interest and other finance expense	(262)	(234)	(66)	(45)
Finance net	(190)	(161)	(55)	(25)

Book-to-bill ratio

Definition

Book-to-bill ratio is calculated as Orders received divided by Total revenues.

Reconciliation

(\$ in millions, unless otherwise indicated)	Three months ended December 31,	
	2018	2017
Orders received	6,985	6,328
Total revenues	7,395	6,804
Book-to-bill ratio	0.94	0.93

(\$ in millions, unless otherwise indicated)	Year ended December 31,		
	2018	2017	2016
Orders received	28,590	25,034	23,658
Total revenues	27,662	25,196	24,929
Book-to-bill ratio	1.03	0.99	0.95

Cash return on invested capital (CROI)

Definition

Cash return on invested capital (CROI)

Cash return on invested capital is calculated as Adjusted cash return divided by Capital invested.

Adjusted cash return

Adjusted cash return is calculated as the sum of (i) net cash provided by operating activities, (ii) interest paid and (iii) estimate to annualize/eliminate the net cash provided by operating activities of certain acquisitions / (divestments).

Adjusted total fixed assets

Adjusted total fixed assets is the sum of (i) property, plant and equipment, net, (ii) goodwill, (iii) other intangible assets, net, and (iv) investments in equity-accounted companies less (v) deferred tax liabilities recognized in certain acquisitions.

Net working capital

Net working capital is the sum of (i) receivables, net, (ii) contract assets, (iii) inventories, net, and (iv) prepaid expenses; less (v) accounts payable, trade, (v) contract liabilities, and (vi) other current liabilities (excluding primarily: (a) income taxes payable, (b) current derivative liabilities, (c) pension and other employee benefits, and (d) payables under the share buyback program); and including the amounts related to these accounts which have been presented as either assets or liabilities held for sale.

Capital invested

Capital invested is the sum of (i) Adjusted total fixed assets, (ii) Net working capital and (iii) Accumulated depreciation and amortization.

Reconciliation

(\$ in millions, unless otherwise indicated)	Year ended December 31,		
	2018	2017	2016
Adjusted cash return:			
Net cash provided by operating activities	2,924	3,799	3,843
Interest paid	243	205	213
Estimate to annualize/eliminate the net cash provided by operating activities of certain acquisitions/(divestments) ⁽¹⁾	40	67	-
Adjusted cash return	3,207	4,071	4,056
(\$ in millions, unless otherwise indicated)	December 31,		
	2018	2017	2016
Adjusted total fixed assets:			
Property, plant and equipment, net	4,133	3,804	3,325
Goodwill	10,764	9,536	7,953
Other intangible assets, net	2,607	2,425	1,821
Investments in equity-accounted companies	87	72	77
Fixed assets included in assets held for sale ⁽²⁾	3,362	3,505	3,682
Total fixed assets	20,953	19,342	16,858
Less: deferred taxes recognized in certain acquisitions ⁽³⁾	(2,234)	(2,157)	(1,901)
Adjusted total fixed assets	18,719	17,185	14,957
Net working capital - continuing operations (as defined above)	2,584	2,490	2,616
Net working capital - discontinued operations	1,698	1,420	1,248
Accumulated depreciation and amortization:			
Accumulated depreciation of property, plant and equipment	5,528	5,547	4,801
Accumulated amortization of intangible assets including goodwill ⁽⁴⁾	3,229	3,018	2,620
Accumulated depreciation and amortization of assets held for sale ⁽²⁾	3,332	3,303	3,092
Accumulated depreciation and amortization	12,089	11,868	10,513
Capital invested	35,090	32,963	29,334
Cash return on invested capital (CROI)	9.1%	12.4%	13.8%

(1) Divestments: In 2017 High-voltage cable and cables accessories businesses, Oil & Gas EPC business. Acquisitions: In 2018 GEIS, in 2017 B&R.

(2) Held for sale: In 2018, 2017, 2016 the Power Grids business is reported as a discontinued operation. Additionally, 2016 also includes amounts relating to the global high-voltage cable system business which was sold in March 2017.

(3) GEIS acquired in 2018, B&R acquired in 2017, Power-One acquired in 2013, Thomas & Betts acquired in 2012 and Baldor acquired in 2011.

(4) Includes accumulated goodwill amortization up to December 31, 2001. Thereafter goodwill is not amortized (under U.S. GAAP) but subject to annual testing for impairment.

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