Index

ABL. See Asset-based lending AccExp. See Accrued expense Accordion syndrome, 336–337 Accounts payable (AP), 289-292, 447, 483 deciding when to pay, 291–292 financing and, 289 paying early, 290-291 paying late, 291 preferred customer and, 290 quality of, 290 relationships and, 289-290 technology and, 290 Accounts payable days outstanding (APDOS), 483 Accounts receivable (AR), 282–283, 445-450 management of, 284–285 Accrued expense (AccExp), 447 Accrued liabilities, 12 Acquisitions, 42, 147–159, 210–224 See also Case studies CFO's valuation of, 156, 165-166 current status of, 213-215 performance statistics for the three-year plan, 217-220 performance targets, 215-217 present value of cash flows, 148-155 valuations of business plans for, 159-166 valuations using CFaIA, 158 A&D Incorporated, 136–147 forecasted cash flows, 136 present value of cash flows after the forecast period, 137-138 present value of cash flows during the forecast period, 137-138 Administration, 272-273 expenses, 382-384 Advanced Solar Systems Corporation, 27–34 American Technology Corporation, 71–79 estimated balance sheet, 73

estimated income statement, 72 forecasted cash flow statement, 75 Amortization, 4, 5-6, 213, 442-443, 446 of assets, 280-282 depreciation and, 273–311 impairment testing for goodwill, 279 overview, 278-279 tax treatment of impairment, 279–280 AP. See Accounts payable APDOS. See Accounts payable days outstanding AR. See Accounts receivable Asset based lending (ABL), 393–394 Assets amortization of, 280–282 current, 444-446, 473, 487, 517 depreciation of, 273–279 examples of, 464, 474, 502, 518, 538 fixed, 294-298, 445-446, 472, 485, 500, 516 intangible, 300-301, 442-443, 446, 472, 485, 499, 515, 536 other current, 445 sale of depreciated assets and depreciation recapture, 278 total, 447 Attributes model, 233–235 entry-level, 233 penetration, 234–235 Balance sheet, 2-3, 10-20, 443-450 assumptions of, 461 basic, 11-12 calculating statistics for, 292-301 for capital structure, 411, 416 comparative example of, 29 components of, 200-202 description of, 438 drivers of, 282-292 equations defining, 438

Balance sheet (cont'd) examples of, 29, 73, 206, 207, 210, 212, 402, 406, 414, 421, 425, 431, 444, 465, 474, 481, 488, 503, 518, 538 relationships, 448-450 terminology, 405-406 typical, 444 unlevered, 407-408 Bank revolver, 393, 398 Beta for comparable companies, 93 definition of, 91-92 for non-public companies or business units, 93 Bonds AA, 390 AAA, 395 BBB, 390 high-investment-grade market for, 395 high-yield, 394 Business plans, 159–166 reevaluation of, 374-376 Business units. See Non-public companies **Buyouts** debt reduction in a leveraged environment, 51 Capital asset pricing model, 88-89 Capital employed (CE), 2, 13-14, 197 definition of, 13 Capital structure, 412 additional equity to fund future growth, 414-415 data for calculations, 415, leverage and, 406-418 short-term debt and, 410-412 TSHE and, 415-417 unlevered balance sheet, 409-410 Capital turnover definition of, 195 return on revenue and, 198–199 Case studies. See also Acquisitions A&D Incorporated, 136–147 Advanced Solar Systems Corporation, 27 - 34American Technology Corporation, 71–79 DLK Enterprises, 93-94 Edsson Corporation, 424–436 Hope Incorporated, 97–98 Innovative Engineering Corporation, 302-311 JM Maher Corporation, 331–335

Laser Technologies Inc., 339-352 Light Technologies Inc., 460-540 Mayfair Company, 203-205, 400, 401 Nexgensonics, 183–194 Nobel Electronics Inc., 406, 411, 412, 414, 416 Omega Corporation, 115–122 Paradigm Corporation, 421–424 Pharos Corporation, 210-224 Richmond Company, 205-209, 292-301 Safety Solutions Corporation, 376–385 Stephenson Corporation, 67–71 Cash flow, 444. See also Valuation models in acquisitions, 148-155 after financing activities, 459 after payment of dividends, 459 after the forecast period, 128-134 calculated, 156 cash generated/(156d, 457, 459–460, 492 dividends paid, 456 drivers of, 142-147 equivaler cy and, 156–159 financing activities and, 456 finite fixed model and, 130 finite growth model and, 132–134 forecasted, 136–147 during the forecast period of, 128, 540 growth equations, 592 inventory and, 288 investing activities and, 455-456 maximizing, 227 from operating activities, 455, 459 operational, 590-592 perpetual fixed model and, 129 perpetual growth model and, 131–132 post-forecast period of, 540 present value of, 127-136 proofs of, 24, 457, 460, 465, 478, 492-493, 508, 534 return on capital employed and, 195-224 sources and uses of, 455 strategies and best practices for managing, 225-311 stream of, 540 terminal value model and, 134 Cash flow after investing activities (CFaIA), 2, 21-24 calculating, 23-24, 456, 459 estimating growth rates of, 52 examples of, 78, 492-493 forecasting, 78 general equations for estimating, 583–592

impact on investment rate after investing, 62-66 IR and, 45-46 methodology for estimating, 56 models, 49–51 net income return and, 57-62 operational cash flows, 50-51 year-by-year analysis of, 46-49 Cash flow from financing (CFF), 2, 459 Cash flow from operating activities (CFfOA), 2, 7, 49-51 examples of, 490–491 Cash flow statement, 2, 19-24, 451-457 basic, 19 definition of, 20–21 description of, 438-439 discounted, 18 drivers of, 18, 19 equations defining, 439 examples of, 31, 75, 311, 452, 458, 466, 479, 489, 493, 508, 523, 527, 534 operating activities, 453, 458 revisited, 457-460 simplified, 458 typical, 452 working capital accounts, 453-454, 458-459 Cash generated/used (CGU), 2 calculating, 23-24 CE. See Capital employed CFaIA. See Cash flow after investing activities acquisitions and, 158 CFalAg, growth rate of, with constant investment rate and NiROCE, 52–54 CFF. See Cash flow from financing CFfOA. See Cash flow from operating activities CGU. See Cash generated/used COGS. See Cost of goods sold COGS/Net Rev, 405 Competition, 226, 270-271 Concurrent project model, 306 Consumers, self-education of, 246 Conventional wisdom model, 229 Correlation coefficient, 326–328 Cost of goods sold (COGS), 3, 213, 440 annualized, 483 examples of, 318, 340 fixed and variable, 210 impact factors for, 238-273 inventory and, 451 overview, 238

Covenants bank loan, 425 example of, 422 financial, 419-424 financial performance example, 421-424 lender requirements, 432 loans and, 390, 392 performance versus financial, 423 Credit, E-Commerce and, 255 Credit cards, 253-254 Credit ratings, 390, 395-398. See also Debt description of, 396 impact of debt on return on capital employed and return on equity, 399-406 impact on interest rate, 396-397 investment- and speculative-grade debt and, 397-398 use of, 396 Creditworthiness, 392 Current assets, 444-445 examples 275, 487, 502, 517 Current liabilities, 447 examples of, 483, 498, 514 Customers control of, 248-249 of E-Commerce, 253 match with, 243 preferred, 290 profitability of, 283 as a profit center, 271 quality of, 283 support from, 242, 270-271 Cycle time efficiency, 337 Cycle time reduction, 313, 337–339 D&A. See Depreciation and amortization D&A/Net Rev. 405 Debt. See also Credit ratings creditworthiness and, 392 estimating the cost of, 88-89 financing alternatives, 393-395 financing costs, 398-399 investment- and speculative-grade, 397-398 leverage and, 389-436 long-term, 12, 448, 471, 484 market value of, 85-87 overview, 391 priority of, 393

reduction in a leveraged buyout

environment, 52 short-term, 211, 410–412, 447 Debt-to-equity ratio, 82 Decisions, 243 Declining balance method, 274-275 Del Ray Corporation, 26 Depreciation, 3-4, 5-6, 208, 213, 442, 445-446, 475 and amortization, 273–311 of assets, 273-279 declining balance method, 274-275 impact of taxes on, 278 sale of depreciated assets and depreciation recapture, 278 straight line method of, 11, 274 sum of the years digits method, 275–276 units of production method, 276-278 Depreciation and amortization (D&A), 355 examples of, 481, 495, 510 Discount rate, 136 Diversifiable risk, 89 Dividends, 448 cash flow and, 456, 459 DLK Enterprises, 93–95 calculated betas, 94 data and requirements, 94 Driver equation, developing, 400-406 Earnings before interest, taxes and depreciation (EBITDA), 2, 437, 442 analyzing, 7 calculating from operating expenses and expense coverage ratio, 369-370 gross margin and, 368-369 improvement plan, 379-361 managing, 370-372 to value a company, 7-10 to value a company if the industry multiple isn't known, 8–10 Earnings before interest and taxes (EBIT), 2, 442 Earnings before taxes (EBT), 443 EBIT. See Earnings before interest and taxes EBITDA. See Earnings before interest, taxes and depreciation EBT. See Earnings before taxes E-Commerce, 226, 251-256. See also Internet; Marketing buyers and, 251-253

cost structure of, 256 credit and, 255

credit cards and, 253–254 developing strategies for, 254–256 distribution and, 254

ecosystems and, 255 impact on existing distribution channel, 254 products and services offered, 253 targeted customer group, 253, 254 website for, 254-255 Economic order quantity (EOQ), 286–288 inventory considerations and, 601-610 Economics, history of, 313, 314 Ecosystems, 255 Edsson Corporation, 424–436 balance sheets, 425, 431 bank loan covenants, 425 calculating interest costs, 430 comparative term sheets, 426-428 current and forecasted year 5, 432 final term sheets, 429 financial statements, 424-425 impact of leverage on ROE and ROCE, 433 income statements, 424, 430 lender covenarit requirements, 432 lenders for, 428 private pincement requirements, 431 revised term sheets, 428-429 Education self-education of consumers, 246 training and, 269 Employees number of, 323-324 promotion of, 269 reduction in force, 313 Enterprise value, 83, 126 definition of, 193 multiples, 194 Entrepreneurship, 259 Envelope equations, 35-79, 585-589 applying, 37-39 assumptions of, 37 equivalency and cash flow models, 156–159 estimating growth rates of cash flow after investing activities and net income, 52 impact of net income return on capital employed and investment rate on cash flow after investing activities when NiROCE and IR are constant, 57-62 incorporating the IR and NiROCE into net income, 43-45 incorporating the IR into the expression for cash flow after investing, 45-46 investment rate and, 42-43 methodology for estimating net income, cash flow after investing activities, and growth rates, 56

net investments and, 39-42 NI and CFaIA models, 49–51 overview, 36 return on capital employed and, 36-39 year-by-year analysis of, 46-49 EOQ. See Economic order quantity Equity calculating the cost of equity using market data, 97–98 estimating the cost of, 88-89 market value of, 85-87 Equivalency equations, terminal value multiplier and, 182–183 ExpCR. See Expense coverage ratio Expense coverage ratio (ExpCR), 353-387 basics of, 355-363 day-to-day management of, 363-366 development of, 372 drift of, 373-376 dynamic model and, 363-366 EBITDA and, 367-371 examples of, 376-385 good management practices and the model of, 373-376 managing, 370-372 overview, 354-355 practical aspects of, 367

FGM. See Finite growth model Financial Accounting Standards Board 34 Financial statements, 2–3. See also Balance sheet; Cash flow statement; Income statements overview, 439 understanding, 437-538 Financing, 357 alternatives, 393-395 debt, 398-399 investment grade, 394 mezzanine, 395 private placement, 394 Finished goods, 325 Finite fixed model (FXM), 124, 146, 150-151, 157, 160-161, 166 cash flows and, 130 Finite growth model (FGM), 124, 146, 153-154, 158, 161, 166-167, 190-191 assumptions, 549 cash flows and, 132-134, 140-142 example of, 549 Fixed assets, 294-298, 445-446 cost reduction and, 298

examples of, 472, 485, 500, 516 high costs and, 298-299 investments for, 296, 297 make-versus-buy decisions and, 296 outsourcing, 297 vertical integration and, 297 FXM. See Finite fixed model GM. See Gross margin Goodwill, 446 Gradation model, 229–230 Gross margin (GM), 4, 441 EBITDA versus expense coverage ratio for, 368-369 examples of, 479, 494, 509 Growth equations, 592 research and development and, 593-600 Growth models, 577–582 general compound annual growth rate model, 577-578 general expression for CFaIAG, growth rate of CFaiA, 579-580 general expression for NIg, the growth te if NI, 580–582 pultistage, 554 overview, 577 perpetual, 124, 139-140, 143, 151-152, 157, 161, 166, 190 single-stage, 545-546, 551, 552 three-stage, 558-563 two-stage, 555-558 Growth rate of net income (NIg), 54 calculating, 61-62 with constant IR and NiROCE, 54-56 methodology for estimating, 56 in research and development, 599 Hope Incorporated, 97–98 Hurdle rate, 81-82, 100-101. See also Weighted average cost of capital IBD/Net Rev, 406 Idiosyncratic risk, 89 Impairment testing for goodwill, 279 Incentives, 269 Income statements, 3-10, 212, 440-443 analysis of, 27-29 basic, 3, 354 for calculating required revenue, 25-27 comparative examples of, 28, 303, 524-525 components of, 199

Income statements (cont'd) condensed, 26 equations defining, 437-438 examples of, 71, 72, 115, 121, 183, 184, 199, 211, 302-303, 309, 317, 322, 331, 332, 342, 400, 406, 411, 414, 416, 421, 424, 430, 440, 463, 469, 482, 494, 497, 512, 530 goals of, 208 last-twelve-month, 377-378 purpose of, 437 reconstructing, 321-323, 340 terminology, 405 three-year, 384 typical, 440 IncTaxes. See Local income taxes Industry multiple, 7 unknown, to value a company, 8-10 Innovative Engineering Corporation, 301-311 cash flow statement, 311 concurrent project model, 306 income statements for, 302-303, 309 sequential project model, 306 working capital statistics, 310 Intangible assets, 300-301, 442-443, 446 examples of, 472, 485, 499, 515, 536 Integration coefficient, 328-329 example of, 342 in practical terms, 329-330 for service and non-manufacture models, 331 Interest, 4, 213 calculating costs of, 42 expense, 511, 519 -free loans, 284 ignoring the interest component, 6 income, 74 Interest coverage ratio, 420 Interest/Net Rev, 405 Interest rates current and historical, 96 impact of credit ratings on, 396-397 Internet, 245-250. See also E-Commerce; Marketing accountability and, 247-248 as an online marketplace, 250 "configure to order," 252 consumer self-education and, 246 human interface minimization, 247 image and messaging uniformity, 247 online marketer and, 250-251

thought leadership and, 245–246 as a tool, 249-250 transactional speed and ease, 246-247 Inv. See Inventory Inventory (Inv), 288-289, 445 average, 603-604 carrying costs of, 604 cash flow and, 288 components of costs of, 601-605 cost of goods sold and, 451 costs of, 288 EOQ model and, 601-610 optimum investment in, 602 overview, 601 procurement costs of, 604-605 profit and, 288–292 safety stock, 608-610 shortage costs of, 607-308 total cost of, 605 variables of, 610-511 visibility and space for, 288 Investment bankers, fees of, 42 Investment rate (IR) calculating growth rate and, 61–62 cash flow after investing and, 45–46 constant, 50, 589–590 definition of, 53 growth rate, with constant, 52-54 growth rate, with constant IR and NiROCE, 54-56 impact on cash flow after investing, 62–65 net income and, 42-45 Investments, 284-287 annual return on, 79 calculating, 23-24 cash flow after investing activities, 21-24 constant rate of, 43 envelope equations and, 39-42 examples of capitalized and depreciated, 40-41 examples of not capitalized, 41-42 fixed assets and, 296, 297 growth of, 22 impact on net income, 76 investing activities, 455-456 net, 39-42 net income generated by, 44 operating, 42 rate and, 42-43 sustaining, 21 Investors, 209 IR. See Investment rate

JM Maher Corporation, 331–335 income statement, 331 operating expenses, 332 productivity improvement table, 333 reconstructed income statement, 332 Laser Technologies Inc., 339–352 cost of goods sold, 340 income statement, 340 integration coefficient, 342 restructured income statement, 340 Last-twelve-month (LTM) income statement, 377-378 Leadership, 227, 245-246 Learning, training and, 269 Leases capital, 84 operating, 84 own or lease considerations, 240 Leverage for capital structures, 417 debt and, 389-436 impact on capital structure, ROCE, and ROE, 406–418 Liabilities accrued, 12 current, 12, 211, 447 example of, 464 total, 448 LIBOR. See London inter-bank offered rate Lifetime revenue factor, 596–598 Light Technologies, Inc. (LTI), 460-538 balance sheet assumptions 461, 481 balance sheet examples, 455, 474, 488, 496, 503, 518, 538 cash flow after investing activities, 491-492, 506 cash flow from operating activities, 490-491, 506 cash flow proofs, 465, 478, 492-493, 508, 534 cash flow statements, 466, 479, 488, 493, 508, 523, 534 comparative cash flow statements, 528 comparative income statements, 523-527 current assets, 473, 487, 502, 517 current liabilities, 470, 483, 514 defining the issues and redefining the assumptions, 461-464 depreciation and amortization, 481, 495, 510 description of the investment opportunity, 460-461

financing activities, 465, 507 fixed assets, 472, 485, 500, 516 gross margin of, 479, 494 income statements, 467, 469, 482, 494-496, 497, 512, 530 intangible assets, 471, 485, 536 interest expense, 511 long-term debt, 471, 484 operating assumptions, 462 operating expenses, 467, 480 operations, 475, 488, 489, 531 pro-forma financial statements preparation for, 463-494 shareholders' equity, 482, 484, 497, 513, 515, 535, 536 working capital accounts, 475-476, 489, 520, 531 year 1 cash flow statements, 464-466 year 1 income statement, 463-464 year 2 balance sheets, 469-478 year 2 income statements, 467-469 year 3 cash flow statements, 488-494 year 3 income statement, 478-488 year4 balance sheets, 495–503 year 4 cash flow statements, 503–508 ear 4 income statements, 494–508 year 5 cash flow statements, 518-523 year 5 income statements, 508-518 year 6 cash flow statements, 530-538 year 6 income statements, 527-530 Loans bank term, 393 covenants and, 390, 392 institutional term, 394 interest-free, 284 London inter-bank offered rate and, 391-393 term, 398, 399 Local income taxes (IncTaxes), 443 London inter-bank offered rate (LIBOR), 389-390, 427 pricing loans and, 391-393 Long-term debt (LTD), 12, 448 examples of, 471, 484 LTD. See Long-term debt LTI. See Light Technologies, Inc. LTM. See Last-twelve-month income statement Manufacturing integration coefficient for, 329-330 operating margin versus productivity for,

334

Manufacturing (cont'd) overhead, 441-443 revenue and, 318 technology for, 238-240 value added, 317-319 Marketing, 245–248, 356. See also E-Commerce; Internet budget for, 248 changes in conditions affect on, 360-361 cutting expenses in, 382 Internet and, 245-251 investments and, 248 overview, 245 sales and, 268-269 Market risk, 89 Matching, 356 Mayfair Company, 203-205 balance sheet, 401 income statement, 400 Mergers, 42 Metrics, productivity and, 339-348 Mezzanine financing, 395 Migration, 231-233 Models. See Growth models; Valuation models Moody's, 394 "Moore's Law," 53-54 Multistage growth models, 554 Multi-stage valuations, 134, 167-170, 16 examples, 170-176 NetFA/Net Rev, 406 Net fixed assets, 214 NetIA/Net Rev, 406 Net income (NI), 443, 592 calculating, 6 calculating growth rate of, 61-62 estimating growth rates of cash flow after investing activities, 52 general equations for estimating, 583-592 generated by net investment, 44 growing, 71 impact from incremental investments, 76 incorporating IR and NiROCE into, 43-45 methodology for estimating, 56 overview, 2 revenue required for, 24-27, 66-71 year-by-year analysis of, 46-49 Net income return on capital employed (NiROCE), 583-585 calculating growth rate of, 61-62 cash flow and, 43-45, 57-62 definition of, 53

impact on investment rate and cash flow after investing, 62-65 investment rate and, 57-62, 589-590 operational cash flows, 50-51 variable, 58–61 Net intangible assets, 214 NetInvest. See Net investments Net investments (NetInvest), 39-42 models, 47, 49-51 NetRev. See Net revenue Net revenue (NetRev), 3-4, 440 Nexgensonics, 183-194 forecasted income statement, 184 historical income statement, 183 statistics and financial data, 184 valuations, 193 valuing, 184-189, 189-194 NI. See Net income 📈 NIg. See Growth rate of net income NiROCE. See Net income return on capital employed Nobel Electronics Inc. balance sheet, 406 balance sheets for capital structure, 411, 412, 414, 416 income statement, 406 income statements for capital structure, 411, 412, 414, 416 Non-manufacturing, integration coefficient for, 331 Non-public companies comparable companies compared, 93 estmating beta for, 93–95 industry comparisons of, 93 market value of debt and equity, 86-87 Obsorne Computer, 262 OCA. See Other current assets OCL. See Other current liabilities OLM. See Online marketer Omega Corporation, 115–122 income statements, 115 investment and pretax cash flow, 117 present value analysis of cash flows, 120 present value analysis of cash flows, reduced, 122 projected income statements, 121 projected performance statistics, 121 weighted average cost of capital data, 118 Online marketer (OLM), 250-251 Operating activities, 453

cash flow from, 455

Operating expenses (OpExp), 42, 213, 244-256, 442, 451 examples of breakdown of, 320, 467, 480, 509 marketing, 245-248 overview, 244-245 time horizons for, 244 Operating investments, 42 Operating margin (OpMargin), 324-329 definitions of, 324-325 versus productivity for manufacturing, 334 in the productivity model, 325-329 **OpExp.** See Operating expenses OpMargin. See Operating margin Other current assets (OCA), 444 Other current liabilities (OCL), 447 Outsourcing, 297 Overhead, 298-300, 440-441 for manufacturing, 441-443 Paradigm Corporation, 421–424 balance sheet, 422 financial performance covenants, 422 income statement, 421 performance versus financial covenants, 423 Performance statistics, 220-221 for adoption of the three-year plan 223-224 projected, 121 for the revised three-year plan, 221-223 for the three-year plan, 217-220 Period cash balances, 24 Period expenses, 41 Perpetual fixed model (PXM), 123, 138-139, 143, 146, 148-150, 157, 160, 166, 180-181 cash flows and, 129 Perpetual growth model (PGM), 124, 139-140, 143, 146, 151–152, 157, 161, 166, 190 cash flows and, 131–132 impact of 1/(k - g) on, 180–181 PGM. See Perpetual growth model Pharos Corporation, 210-224 PLE. See Product line extensions PLM. See Product lifecycle management; Product line maintenance Point of sale (POS), 252 POS. See Point of sale Post-forecast-period models, 176-180 equivalence of, 176-180

PP&E. See Property plant and equipment Premium model, 235–238 Premium value added, 321 Present value (PV), 110–112 of any stream of cash flows, 539-540 applying the equations for, 134-136 of cash flows methodology, 127-136 of cash flow that takes place at the end of year, 540-541 examples of cash flows, 120, 122 finite growth model, 549 of a fixed stream of cash flows in perpetuity, 544-545 general equation of single-stage cash flows that grow at a fixed rate, 551-554 models, 539-563 multistage growth models, 554 single-stage growth models, 545–546 of stream of cash flows that grow at a fixed rate for a finite period, 546-549 of stream of fixed cash flows for amount of years, 542-544 of stream of cash flows that grow at a fixed hte in perpetuity, 550 derminal value of cash flow at the end of year, 541-542 three-stage growth models, 558-563 two-stage growth models, 555–558 Pricing, 357-358, 382 London inter-bank offered rate and, 392 Pricing-driven models, 228-230, 237-238 price erosion and, 315-316 Productivity, 313-352 accordion syndrome and, 336-337 change in work progress and finished goods, 318-324 cycle time reduction of, 337-339 definition of, 316 developing a model for, 316 focusing on, 314-315 goals for, 336 improving, 344-352 integration coefficient and, 329 metrics and, 339–348 model, 316-324 in non-manufacturing models, 330-335 operating margin and, 325-329 overview, 314 price erosion and, 315-316 qualitative perspective on, 335-337 strategies for, 339, 349-352 value added, 317

Product lifecycle management, 257 growth rates and, 599 lifetime revenue factor of, 265, 266 Product line extensions (PLE), 257 Product line maintenance (PLM), 257 Promotions, 269 Property plant and equipment (PP&E), 445 Public companies, market value of debt and equity, 85-86 PV. See Present value PXM. See Perpetual fixed model QIP. See Quality improvement program Quality, 241-242 of accounts payable, 290 of products, 283, 288 shipping and invoicing patterns, 283 Quality improvement program (QIP), 241-242 R&D. See Research and development Reduction in force (RIF), 313 Research and development (R&D), 238-240. 257-268. See also Research and development calculating the cost of the next generation, 264, 598 costs of, 263-268 defensive, 257 developing an expression for cost the next generation, 595-596 expense coverage ratio and, 381 generational cost factor, 573-594 growth and investment equation, 263, 593-600 growth rates and product life cycles, 599 innovation of, 259 lifetime revenue factor, 596-598 manufacturing technology, 238-240 offensive/innovation, 257 overview, 593 product life cycle, 594-595 renovation, 257 software for, 259-263 success of, 258 technology and, 258-259 types of, 257 Residual risk, 89 Return on capital employed (ROCE), 1, 12–13, 389, 583-585 alternatives to, 209 balance sheet and, 200-202

balance sheet drivers of, 282-292 basic pricing-driven models for, 228–230 calculating, 14, 203-205 capital structure data for, 411, 413 cash flow analytics and, 195-224 definition of, 36-37 driver equation, 202–203 drivers of, 14-15, 197-209 factors that impact cost of goods sold, 238-273 fixed and variable costs, 210 impact of debt on, 399-406 impact of leverage on, 433 income statement and, 199, 212 investor concerns, 209 leverage and, 406-418 managing, 209-210 maximizing, 227 operating expenses, 244-256 overview, 196-197 practical aspects of managing, 209–210 predictability and consistency of, 209–210 versus risk, 209 strategies and best practices for Chanaging, 225–311 Value-added models, 230–238 Return on equity (ROE), 389 capital structure data for, 411, 413 developing the driver equation, 400-406 drivers of, 435 impact of debt on, 399–406 impact of leverage on, 433 leverage and, 406-418 Return on revenue capital turnover and, 198–199 definition of, 195 Rev. See Revenue Revenue (Rev), 213, 440 annualized, 486 capture, 231 for a given level of net income, 24–27 income statement for calculating required, 25-27 lifetime revenue factor of a product, 265, 266, 596-598 required for a given level of net income, 24-27, 33-34, 66-71 Richmond Company, 205-209, 292-301 achieving a targeted return on capital employed, 205 balance sheets for, 206, 207, 208, 297 income statement, 292

income statement goals of, 208 statistics for, 294 RIF. See Reduction in force Risk market, 89 relative credit, 396 versus return on capital employed, 209 sharing, 356 systematic, 89 systemic, 89 undiversifiable, 89 Roadmapping, 259 ROCE. See Return on capital employed ROE. See Return on equity RR. See Revenue, required Safety Solutions Corporation (SSC), 376-385 administrative expenses, 382-383 Earnings before interest, taxes and depreciation improvement plan, 379-381 expense coverage ratio, 380 income statements, 378, 380, 381 pricing, 382 research and development, 382, 383-384 sales marketing and service expenses of, 382 thee-year income statement, 384 Sales, 268-269, 356 professionals in, 269 Security, 392 Senior debt, 426 Senior leverage ratio, 419-420 Sequential project models, 306 Service, 240-244, 270-271 control and, 244 customer support, 242 cutting expenses in, 382 decisions with, 243 effectiveness of quality program, 241-242 integration coefficient for, 331 match with customers, 243 systems and systemization, 243-244 Short-term debt (STD), 211, 410-412, 447 Single-stage growth models, 134, 545–546 assumptions, 551 example of, 552 Single-stage valuation models, 125, 167 equivalence of, 125 SKU. See Stock keeping unit Specific risk, 89 SSC. See Safety Solutions Corporation

Standard & Poor's, 390, 394 opinions reflected by, 397 Statistics calculating for a balance sheet, 292-301 example of, 310 STD. See Short-term debt Stephenson Corporation, 67–71 income statement, 71 revenue components for, 70 statistics, 67 Stock keeping unit (SKU), 378, 381–382 Straight line method, 11, 274 Sum of the years digits method, 275-276, 277 Supply-versus-demand model, 228 Systematic risk, 89 Systemic risk, 89 Systems and systemization, 243–244

Taxes, 5-6, 301 depreciation and, 278 impact of weighted average cost of capital on. 87-88 local income, 443 loss carry-forward, 512, 529 treatment of impairment, 279–280 Taxes payable (TaxPayable), 447 TaxPayable. See Taxes payable Tax rate, 214 Technology accounts payable and, 290 advancement of, 356-357 manufacturing and, 238-240 research and development and, 258-259 software and, 259–263 Tenor, 392 Terminal value model (TVM), 124–125, 144, 146, 154-155, 158, 162, 167, 182-183 cash flows and, 134 Terminal value multiplier (TVM), 541 equivalency equations and, 182–183 Three-stage growth models, 558–563 assumptions, 560 example of, 559 Total assets, 447 Total leverage ratio, 420 Total shareholders' equity (TSHE), 448-450, 470 capital structure and, 415-417 examples of, 471, 482, 484, 497, 499, 513, 515, 535, 536

Training at customer's expense, 270 education and, 246 learning and, 269 TSHE. See Total shareholders' equity TVM. See Terminal value model; Terminal value multiplier Two-stage growth models, 555–558 assumptions, 555 Undiversifiable risk, 89 Units of production method, 277, 278

Valuation models, 123–194, 565–576. See also Cash flow; Growth models; Research and development attributes model, 233-235 basic pricing-driven models, 228-230 business valuation, 565–576 capital asset pricing, 88-89 comparable companies and, 127 comparable transactions methods and, 127 concurrent project model, 306 considerations for valuation, 166-167 conventional wisdom model, 229 demand and cost, 228-230 drivers of cash flow and, 142-147 economic order quantity, 601-610 equivalence of post-forecast-period models, 176–180 equivalency and cash flow, 156-159 estimating, 126-136 finite fixed, 124, 130, 150-151, 157, 160-161, 166 finite growth, 124, 132-134, 140, 146, 153-154, 158, 161, 166-167, 174, 187, 190-191, 549 finite growth cash flow, 140-142 gradation model, 229-230 initial cash flow sequentially followed by a finite period of cash flows that grow at a fixed rate and a perpetual fixed cash flow, 573-574 initial cash flow sequentially followed by a finite period of cash flows that grow at a fixed rate and a terminal cash flow, 572-573 initial cash flow sequentially followed by a finite period of cash flows that grow at a fixed rate for a period and perpetual cash flows that grow at a fixed rate, 574–575

of investment rate, 47-49

migration model, 231–233 multi-stage, 134 multistage growth, 554 multi-stage valuations, 167-170, 167-176 of net investment, 47-51 non-manufacturing, 330–335 overview, 565 perpetual fixed, 123, 129, 138-139, 143, 146, 148-150, 157, 160, 166, 180-181, 190 perpetual growth, 124, 131-132, 139-140, 143, 146, 151-152, 157, 161, 166, 180-181 of the post-forecast-period, 176–180 premium model, 235–238 present value, 539–563 pricing-driven, 228-230 productivity mociel 316-324 revenue capture model, 231 sequential project models, 306 single-stage, 125, 134, 167 single-stage growth, 545-546 stream of cash flows that grow at a fixed rate a period, followed by a stream of cash flows that grow at a fixed rate for a period, and a stream of perpetual growth cash flows that grow at a fixed rate, 575-576 stream of distinct cash flows, 565-566 stream of distinct cash flows followed by a stream of finite fixed cash flows, 567-568 stream of distinct cash flows followed by a stream of finite growth cash flows, 569-570 stream of distinct cash flows followed by a stream of perpetual fixed cash flows, 566-567 stream of distinct cash flows followed by a stream of perpetual growth cash flows, 568-569 stream of distinct cash flows followed by a terminal cash flow, 571 supply-versus-demand, 228 terminal value, 124-125, 134, 144, 146, 154-154, 158, 162, 167, 182-183 three-stage growth, 558-563 two-stage growth, 555–558 valuation, 123–194 value-added models, 230–238 valuing forecasted cash flows, 136-166

Value added in manufacturing, 317–319 quantified, 323 Vertical integration, 297

WACC. See Weighted average cost of capital Wages and salaries payable (W&SP), 447 WC. See Working capital WC_{XSTD}/Net Rev, 405-406 Website content of, 256 for E-Commerce, 254-255 integrated and automated, 256 Weighted average cost of capital (WACC), 81-122, 389 case example of, 118 definition of, 83, 95 estimating beta for non-public companies or business units, 93–95 estimating the cost of debt and equity and the capital asset pricing model, 88-89 example of calculating the value of a stream of cash flows using, 113-115 example of estimating for a company with one class of debt and equity, 98-100 examples of retail corporation's, 101–110 http://www.P

general equations for estimating for a company with one class of debt and equity, 90 impact of taxes on, 87-88 importance of, 82-83 levered and unlevered betas, 90-92 market value of debt and equity, 85-87 multiple hurdle rates and, 100–101 operating and capital leases, 84 origin of the coefficients used in calculating, 96-97 present value and, 110-112 significance and uses of, 95-96 weighting of the components of capital structure, 84-85 Working capital (WC), 15-18, 211, 214, 282 accounts, 453-454 analysis of, 30-34 calculating, 16 🤇 calculating hange in, 18–19 cash flow statement and, 453-454 examples of, 476, 505, 520, 532 statistics, 310 Work in process, 325 →₩&SP. See Wages and salaries payable