

- Acceptance process, 139
- Accountable project office, 377–378
- Action plan, 176–179
- Actual cost of work performed (ACWP), 336, 337, 338, 340
- Adobe Systems, 212–216
- Advocates, 47
- Aircraft industry, 28–29, 246–247, 376
- Analysis document, 62
- Analysis phase, 77
- Apportioning, 192–193, 194, 195.
See also Fixed-phase scheduling
- Authority:
- clarification of, 15
 - decision-making, 41, 44–45
 - establishing, 43, 58–59, 66, 67
 - managing upward, 48
 - organizational structures and, 29, 30, 66, 67
 - responsibility beyond authority, 349–350
 - responsibility matrix, 42, 57, 67–70
 - types of, 58–59
- Backward pass, 159, 160
- Balancing a project, 20, 221–222, 241
- business case level, 222–223, 235–240
 - case studies, 242–247
 - case study, 294–295
 - enterprise level, 223, 240–241
 - project level, 222, 223–234
- Ballpark estimates, 183–184, 187, 188
- Baselines, 344–346, 403–404, 437–438
- Bids, 142, 153, 185, 204
- Black, Fred, 246–247
- Boeing Company, 28–29, 246–247, 376
- Bossidy, Larry, 6
- Bottom-up estimating, 150, 188, 197–198
- Brainstorming, 100
- Brooks, Fred, 224, 226
- Brooks, Herb, 259
- Brummond, J.C., 242–245
- Budgeted cost of work performed (BCWP), 336, 337, 338, 339, 340
- Budgets, 20, 103–104, 116, 198. *See also* Cost(s)
- Burdened labor rate, 199
- Business-case-level balancing, 222–223, 235–240
- Business management skills, 18–19
- Business requirements, 45–46, 79–80, 396–398
- Business risk, 98

- Capability Maturity Model (SEI), 361
- Case studies. *See* Stellar performers
- Cash flow schedule, 202–203, 205–206
- Center of excellence, 374, 376
- Certified project manager(s), 4, 416.
 - See also* Project Management Professional (PMP) certification
- Chain of command, 66
- Champion(s), 41, 42–43
- Change management:
 - change log, 316, 323, 352–353
 - change request, 316, 322
 - configuration management, 311–313
 - expectations management and, 313
 - process, 56, 307–311
 - requirements management, 403–404
 - thresholds, 309–310, 342
- Charan, Ram, 6
- Charter, project:
 - changes that impact, 59–60
 - content of, 58–59
 - creation of, 23
 - purpose of, 42, 57–60, 81, 350
 - sample form, 84
- Checklists, 139. *See also* Downloadable forms
- Children’s Hospital of Seattle, 32–35
- Closeout activities, 313–314
 - closure report, 313, 316, 323
- Closeout phase, 23, 24
- Collaboration, 414–415
- Collaborative problem solving, 257, 258–259, 278–291
- Communication:
 - breakdowns in, 71, 75
 - control through, 22, 251
 - importance of to success, 8, 297–298, 314–315
 - informal, 76
 - with management and customers, 306–307
 - methods for, 75–76, 304–305
 - organizational structures and, 29–30
 - patterns of, 29
 - with team members, 40–41, 298–306
- Communication plan:
 - development of, 57, 71–73, 428
 - escalation procedures, 73
 - Microsoft Project reports, 439
 - purpose of, 71–72, 81, 306, 350, 354
 - response times, 73, 74
 - sample forms, 73–74, 88
 - status meetings (*see* Status meetings)
 - status reports (*see* Status reports)
- Completion criteria, 138–139, 149, 331–332, 350, 352, 354
- Component construction, 228, 229
- Computer network installation case study, 208–211
- Concurrent tasks, 147, 148, 227–228, 352
- Configuration management, 311–313
- Conflict management, 257, 259, 285–288, 291
- Consensus decisions, 282–283, 285
- Contingency strategies, 99, 110–112, 115–116
- Continuous learning, 257, 259, 288–291
- Continuous Risk Management* (Software Engineering Institute), 119
- Contract labor. *See* Subcontractors
- Contract(s), 60–61, 112–113, 204
- Control documents, 307
- Controlling a project. *See* Project control
- Cooperation, 299–300
- Corrective action, 22
- Cost(s). *See also* Balancing a project; Cost-schedule-quality equilibrium
 - baselines, 344–346, 437–438
 - cash flow schedule, 202–203, 205–206
 - control over, 15
 - cost performance, 333–335
 - earned value reporting, 335–342, 439
 - estimating, 15, 65, 150–153, 198–205, 430
 - overruns, 191
- Cost-benefit analysis, 78–79
- Cost performance index (CPI), 337, 341–342

- Cost-plus contract, 112–113, 204
- Cost-schedule-quality equilibrium.
 - See also* Balancing a project balance between variables, 20, 221–222
 - baselines, 344–346, 437–438
 - estimating and, 192
 - expectations about project and, 8, 20–21, 221–222, 353
 - float and, 164, 176
 - project planning and, 22, 146
 - project success and, 19–20
 - rebalancing, 241
- Cost/schedule trade-off table, 232, 233
- Cost variance (CV), 336–338, 340
- Course correction. *See* Balancing a project
- Covey, Stephen, 139
- Crash table, 232, 233
- Critical path:
 - concept of, 161, 162
 - crashing the schedule and, 232, 233
 - keeping on schedule and, 161, 162, 164, 224, 225, 342, 413, 430–431
- Critical path method (CPM), 16
- Crosby, Philip, 20, 234, 239
- Crosswind Project Management, Inc., 422
- Curriculum development, 44
- Customers:
 - communication with, 306–307
 - delays caused by, 352–353
 - expectations of, 313
 - identification of, 45–46
 - requirements of, 45–46, 79–80, 396–399
 - shifting work to, 241
 - as stakeholders, 45–47
 - as team members, 40
- Cusumano, Michael, 137

- Decision-making authority, 41, 44–45
- Decision modes, 257, 259, 282–285, 291
- Definition checklist, 81, 89–90
- Deliverables:
 - defining, 64–65
 - for project life cycle, 366–367, 368
 - WBS development, 129–131, 140–142
- DeMarco, Tom, 232–233
- Detailed estimates, 188
- Diminishing marginal returns, law of, 226, 243
- Disaster recovery, 350–351
- Doing it twice. *See* Rework
- Downloadable forms, 9
 - action plan, 178–179
 - change log, 323
 - change request, 322
 - closure report, 323
 - communication plan, 88
 - control checklist, 325–326
 - issues log, 318
 - kickoff checklist, 321
 - meeting agenda, 319
 - planning checklist, 217–218
 - project charter, 84
 - project proposal, 82–83
 - responsibility matrix, 87
 - risk analysis, 121
 - risk log, 122
 - stakeholder analysis, 50–52
 - statement of work, 85–86
 - status report, 320
 - task assignment, 317
- Drucker, Peter, 355
- Duration:
 - labor availability and, 153–154
 - Microsoft Project functions, 430–432
 - productivity and, 157
 - reducing, 224, 225, 232, 233
- Early start schedule, 174
- Earned value reporting, 335–342, 439
- 8/80 Rule, 135
- Elicitation, 401
- Enterprise-level balancing, 223, 240–241
- Enterprise project management (EPM):
 - applications for, 362
 - components of, 360, 361, 362, 365, 382
 - defined, 361–362, 381–382

- Enterprise project management (EPM) *(Continued)*:
 - development of, 359–360, 361, 382
 - Microsoft Project functions, 439–440
 - model for, 360
 - people, 360, 362, 373–374, 382
 - processes, 360, 362, 366–369, 382
 - project management office, 360, 362, 374–381, 382
 - shift to, 362
 - technology, 360, 362, 369–372, 382
 - tiers of, 360, 361–365, 382
- Enterprise requirements. *See* Business requirements
- Equipment estimates, 150–151, 199–204
- Escalation procedures, 73
- Escalation thresholds, 342–344
- Estimates and estimating:
 - accuracy of, 182–188, 206
 - bids compared to, 185
 - budgets, 198
 - case studies, 208–216
 - cash flow schedule, 202–203, 205–206
 - challenges of, 15
 - costs, 15, 65, 150–153, 198–205, 430
 - labor, 150, 198–199, 200–203
 - materials, 151–153, 204–205
 - negotiating, 187
 - padding, 185, 186
 - planning checklist, 218
 - probability theory and, 105–109
 - reestimating, 223
 - rules for, 185–187
 - schedules, 65, 150–157
 - techniques for, 188–198, 208–210
 - work packages, 150–157, 175, 205, 351
- Execute phase, 23, 24
- Expert authority, 58
- External constraints
 - representatives, 47
- External tasks, 412–413
- Fast-tracking, 237–238, 242–245
- Feedback, 22
- Fifth Discipline, The* (Senge), 291
- Fifth Discipline Fieldbook, The* (Senge), 291
- Finish-to-finish relationships, 150, 151
- Finish-to-start relationships, 150, 151
- Fish see water last, 415
- Fixed-phase scheduling, 236–237, 351–352
- Fixed-price bids, 153, 204
- Fixed-price contract, 112
- Float:
 - calculating, 159, 160–161, 430–431
 - defined, 160
 - managing, 163, 175, 224, 225
 - negative, 161, 164, 165
- Forward pass, 158, 160
- Functionality, 20, 234, 235
- Functional management, 41–45
- Functional manager(s), 5, 27–28, 30, 41, 43–44
- Functional requirements, 397, 398–399
- Function-driven organizations, 26–27, 29, 30
- Funding, 46–47
- Gantt charts, 164, 166–167
- Goal setting, 7, 8, 21–23, 77, 80, 365. *See also* Requirements engineering
- Habitat for Humanity International, 294–295
- Hanes, 410
- Hospital case study, 32–35
- “If it’s useful” rule, 136–137
- Information technology requirements, 394–407
- Initiation phase, 23–24
- Insurance industry, 96
- Integrated product teams (IPTs), 226–227, 246–247
- Integration testing, 228, 229
- Internal tasks, 412–413
- International Institute for Business Analysis (IIBA), 396
- Interviewing, 101

- Inventory management solution case study, 12
- Issues log, 306, 316, 318
- Iterative development, 399, 401, 403

- Job satisfaction, 292
- Johnson, Tony, 416–422
- Juran, Joseph, 20

- Kaizen, 414–415
- Kickoff checklist, 306, 315, 321
- Kickoff meeting, 302
- Kliem, Ralph, 383–393
- Known unknowns, 96, 115–116

- Labor estimates, 150, 198–199, 200–203
- Labor hours, reporting, 334
- Landscape project plan, 441–449
- Law of diminishing marginal returns, 226, 243
- Leadership:
 - art of, 6–9
 - control checklist, 326
 - management of, 8
 - project management role of, 4–5
 - project manager’s responsibility for, 30–31, 48
 - of teams, 257, 259, 260–264, 292–293
- Leadership style, 262–264, 284, 299–300, 315, 326, 355
- Lean methods:
 - applications for, 415
 - concept of, 409
 - development of, 408–409
 - principles of, 409–412
 - techniques for, 412–415
- Lean Thinking* (Womack), 409
- Learning, continuous, 257, 259, 288–291
- Learning to See* (Rother & Shook), 410
- Legitimate authority, 58–59
- Level of effort (LOE) tasks, 340–341
- Line management, 41–45
- Listening skills, 257, 258, 270–274
- Lister, Timothy, 232–233

- Machine That Changed the World, The* (Womack), 409

- Management:
 - communication with, 306–307
 - by exception, 332
 - as stakeholders, 41–45
 - support from, 8
 - upward management, 8, 48
- Management style. *See* Leadership style
- Manufacturing organizations, 137
- Materials estimates, 151–153, 204–205
- Matrix organizations, 27–28, 30
- McConnell, Steve, 138
- Meeting(s):
 - agenda template, 315, 319
 - kickoff, 302
 - management, 257, 258, 274–276
 - status (*see* Status meetings)
- Michelangelo, 17
- Microsoft Project:
 - benefits of using, 423–424
 - combination views, 425, 426
 - design of, 424–425, 426
 - enterprise project management functions, 439–440
 - managing a project, 10, 437–439
 - popularity of, 10, 423
 - report functions, 439
 - setting up a project, 10, 425, 427–436
 - tutorials for, 10, 423
- Microsoft Project Professional, 439, 440
- Microsoft Project Server, 439–440
- Microsoft Project Web Access, 439–440
- Milestones, 149
- Mini-analysis phase, 77
- Mission requirements. *See* Business requirements
- Modeling techniques, 402
- Multiple-developer model, 214–215
- Mythical Man-Month, The* (Brooks), 224

- Negative float, 161, 164, 165
- Network diagram, 147–148, 350, 352, 428, 430
- Network installation case study, 208–211

- Objectives, 65–66
- Ongoing operations, 3, 13, 14–15, 16
- Open task report (OTR), 303–304, 350
- Opponents, 47
- Opportunity management, 117
- Opportunity statement, 77–78
- Order-of-magnitude estimates, 187–188
- Organizational Project Management Maturity Model (PMI), 361
- Organizational structures, 26–30
- OrthoSpot, 12
- Outsourcing, 231–232, 241
- Overtime, 232–234, 242–243

- Parallel tasks, 413
- Parametric estimating, 193, 195–197, 210
- Patient management systems case study, 32–35
- Peer reviews, 139
- Peopleware* (DeMarco & Lister), 232–233
- Perfection, 411–412
- Performance, product, 20, 234
- Personal contact, 299–300
- Phased estimating, 189–192, 208–210. *See also* Fixed-phase scheduling
- Phased product delivery, 238–239, 241
- Phase gate development, 189–190, 388
- Pipinich, Rod, 408–415
- Plan(s) and planning:
 - activities and techniques for, 22–23, 94, 146, 176
 - checklist, 207, 217–218
 - importance of to success, 7–8, 93–94
 - life cycle of project, 23–24
 - model for, 441–449
 - organizing a project through, 93–94, 350–351, 352, 353, 354
 - risk planning, 97–98
 - sponsor's role in, 43
- Predecessor table, 147, 148
- Preventive maintenance, 137

- Probability theory, 105–109
- Problem-resolution thresholds, 342–344
- Problem solving, 347–348
 - customer-caused delays, 352–353
 - disaster recovery, 350–351
 - fighting fires, 354
 - impossible dream, 353
 - problem analysis, 257, 279–282, 291
 - reducing time to market, 351–352
 - responsibility beyond authority, 349–350
 - skills for, 257, 258–259, 278–291
 - volunteers, managing, 354–355
- Problem statement, 77–78
- Process improvement techniques, 241
- Process variation, 413–414
- Product development. *See also* Requirements engineering; Scope, product
 - completion criteria, 138–139
 - life cycle of, 24–25, 367, 399–401, 405
 - project life cycle vs., 25–26
 - reducing time to market, 351–352
- Product failures, 234
- Productivity:
 - duration and, 157
 - job satisfaction and, 292
 - tools and techniques, 241
 - using experts and, 228, 230–231
- Product-oriented organizations, 29
- Profit margins, 185, 240
- Program(s), 28–29, 376–377
- Program evaluation and review technique (PERT), 16
- Program management, 360, 362, 363–364
- Program management office, 376–377
- Progress measurement:
 - control checklist, 325–326
 - controlling a project with, 22, 251
 - cost and schedule baselines, 344–346
 - cost performance, 333–335
 - earned value reporting, 335–342, 439
 - escalation thresholds, 342–344

- milestones, 149
- schedule performance, 329–333
- Project(s). *See also* Successful
 - project(s)
 - approval of, 30, 42–43, 47, 56, 70, 218, 366–367
 - change and innovation through, 1, 2, 5–6, 16, 383
 - definition, 3, 11, 13–14, 96
 - definition checklist, 81, 89–90
 - expectations about, 8, 20–21, 221–222, 353
 - failure of, 395–396
 - life cycle of, 23–24, 25–26, 366–367, 368
 - organizational structures and, 26–30
 - priority of, 30, 43, 78, 240
 - Project charter. *See* Charter, project
 - Project control:
 - activities included in, 22–23
 - challenges of, 15
 - checklist for, 316, 325–326
 - finishing on time, 329
 - progress measurement and, 251
 - team members' role, 251
 - Project definition:
 - activities included in, 21–23
 - communication, 8
 - importance of to success, 7
 - life cycle of project, 23–24
 - Projectized organizations. *See* Project-oriented organizations
 - Project-level balancing, 222, 223–234
 - Project management:
 - challenges of, 15–16, 356
 - functions of, 21–23, 354
 - history of, 3, 16–17, 359
 - industry independence of, 17–19
 - leadership involvement in, 4–5
 - overview, 1–11
 - project-specific requirements for, 367, 369
 - science of, 6–9, 355–356
 - skills for, 3–4, 6–9, 17–19
 - strategic strength of, 5–6
 - techniques and theories for, 3–4, 16–17
 - WBS development, 137–138
 - Project Management Institute (PMI), 3, 337, 361, 418–422
 - Project management office (PMO), 5, 360, 362, 374–381, 382
 - Project Management Professional (PMP) certification:
 - exam questions, 10, 36, 53–54, 91–92, 123–124, 143–144, 180–181, 219–220, 248–249, 296, 327–328, 347–348
 - exam study tips, 418–422
 - growth in, 4, 416
 - requirements to earn, 417
 - Project manager(s):
 - credentials and certification for, 4, 416
 - demand for, 4
 - growth in number of, 4, 416
 - leadership role of, 30–31, 48
 - leadership style, 262–264, 284, 299–300, 315, 326, 355
 - skills for, 3–4, 6–9, 17–19
 - as stakeholders, 39–40
 - Project-oriented organizations, 27, 28–29, 30
 - Project portfolio management:
 - benefits of, 384
 - building the portfolio, 389–393
 - changes to portfolio, 393
 - concept of, 360, 362, 364–365
 - discipline for, 389, 393
 - project office role in, 380
 - purpose of, 383–384, 393
 - system components, 384–389
 - Project support office, 376
 - Proposal, project:
 - content of, 77–80
 - definition checklist for, 90
 - importance of, 80
 - purpose of, 76–77, 81
 - sample form, 82–83
 - Purpose statement(s), 61–62
 - Quality, 20, 45–46, 138–139, 234, 235. *See also* Balancing a project; Cost-schedule-quality equilibrium
 - Quality Is Free* (Crosby), 234, 239

- Rapid Development* (McConnell), 138
- Recalls, 234
- Regulatory agencies, 47
- Reimbursable contract, 112–113
- Reporting period rule, 135–136
- Requirements engineering:
 - defined, 394
 - processes and techniques for, 394, 399–406
 - project success and, 394–396, 406–407
 - requirements capability, building, 406
 - steps to implementing, 405–406
 - types of requirements, 45–46, 79–80, 396–399
- Reserve strategies, 99, 115–116
- Resource(s), 30. *See also* Enterprise project management (EPM)
 - assigning, 432–434
 - constraints, 147–148
 - leveling, 169–176, 434–436
 - managers for, 41, 43–44
 - projections, 94
 - reallocating, 224, 225
- Responsibility beyond authority, 349–350
- Responsibility matrix:
 - development of, 57
 - purpose of, 42, 67–68, 81
 - sample forms, 68, 69, 87
 - setting up, 68–70
- Rework, 234, 239–240, 245, 395
- Right-to-left scheduling, 246–247
- Risk(s):
 - analysis of, 99, 104–109, 118, 121
 - business vs. project, 98
 - contingency and reserve strategies, 99, 110–112, 115–116
 - continuous management of, 99–100, 116–117
 - description in proposal, 80
 - identifying, 99, 100–104, 113, 117
 - log, 113–115, 117, 118, 122
 - management of, 95–98, 117–118, 353
 - management process, 98–117
 - obstacles vs., 80
 - planning and, 97–98
 - planning checklist, 217
 - prioritizing, 99, 104, 108
 - probability assignment, 105–109
 - profile, 101–103, 119–120
 - response strategies development, 99, 109–115, 117
- Rivera, James, 394–407
- Roebing, John, 16–17
- Roebing, Washington, 16
- Rother, Mike, 410
- Rough-order-of-magnitude (ROM) estimates, 187–188
- Rules, project, 21–23, 37, 55–57, 81, 90
- SAFECO Field, 242–245
- Schedule(s). *See also* Balancing a project; Cost-schedule-quality equilibrium
 - baselines, 344–346, 437–438
 - calculating, 157–169, 425–427
 - cash flow, 202–203, 205–206
 - costs and, 153
 - crashing, 232, 233
 - critical path and, 161, 162, 164, 224, 225, 342, 413, 430–431
 - description in proposal, 80
 - disaster recovery and, 350–351
 - estimating, 65, 150–157
 - fast-tracking, 237–238, 242–245
 - finishing on time, 329
 - fixed-phase, 236–237, 351–352
 - management by exception, 332
 - planning checklist, 218
 - realistic, 145, 351
 - resource leveling and, 169–176, 434–436
 - right-to-left, 246–247
 - risk management for, 103–104
- Schedule performance, 329–333
- Schedule performance index (SPI), 339, 341
- Schedule variance (SV), 338–339, 340, 342, 344, 345
- Scope, product, 20, 63, 234, 235–236, 241
- Scope, project, 62–63, 80, 81, 235
- Seattle children’s hospital, 32–35
- Seattle Mariners stadium, 242–245
- Senge, Peter, 291
- Sequence constraints, 147–148

- Serial tasks, 413
- Shingo, Shigeo, 412
- Shook, John, 410
- Single-developer model, 212–214
- Single Minute Exchange of Die (SMED), 412
- Slack. *See* Float
- Software. *See also* Microsoft Project
 - benefits of using, 423–424
 - development of, balancing projects, 236–237
 - development of, estimating project time for, 212–216
 - development of, requirements engineering and, 394–407
 - resource leveling, 175
 - schedule calculating with, 157, 176
 - tools for project management, 10
- Software Development Risk
 - Taxonomy (Software Engineering Institute), 119–120
- Software Engineering Institute (SEI), 119–120, 361
- Solution statement, 78
- Sponsor(s), 41, 42–43, 48, 350
- Staffing issues:
 - balancing a project and, 224, 226–228, 241
 - challenges of, 15
 - labor estimates, 150, 198–199, 200–203
 - overtime, 232–234, 242–243
 - priority of projects and, 43
 - productivity and, 228, 230
 - successful projects and, 21
- Stakeholder(s):
 - advocates as, 47
 - analysis, definition checklist for, 89
 - communication with, 306–307
 - control checklist, 325
 - customers as, 45–47, 48
 - defined, 38, 39
 - expectations of, 8, 20–21, 221–222, 313, 353
 - external constraints representatives as, 47
 - identifying, 38–39, 48–52, 66
 - leadership over, 48
 - management as, 41–45, 48
 - opponents as, 47
 - project managers as, 39–40
 - risk identification activities for, 100–101
 - team members as, 40–41
- Standard work practices, 413–414
- Start-to-start relationships, 150, 151
- Statement of work (SOW):
 - changes to, 66–67
 - content of, 61–66, 81, 351
 - contract compared to, 60–61
 - development of, 57
 - purpose of, 42, 60–61, 81, 350, 353, 354
 - sample forms, 63, 85–86
- Status meetings, 75, 301–305, 350, 351, 352, 354–355
- Status reports, 73, 75, 135–136, 315, 320, 353
- Stellar performers:
 - Adobe Systems, 212–216
 - Boeing Company, 246–247
 - Children’s Hospital of Seattle, 32–35
 - Habitat for Humanity International, 294–295
 - OrthoSpot, 12
 - SAFECO Field, 242–245
 - Software Engineering Institute, 119–120
 - Tynet, Inc., 208–211
- Strategic Selling* (Miller & Heiman), 44
- Subcontractors, 218, 230–232
- Successful project(s):
 - defined, 19–21
 - expectations and, 8, 20–21, 221–222
 - obstacles to success, 80
 - requirements engineering and, 394–396, 406–407
 - sponsor’s role in, 43
 - success factors, 7–9, 355, 361, 373
- Summary task(s), 126, 129, 131–137, 147, 428
- Systematic testing, 139
- Task assignment, 301, 315, 317
- Task relationships, 147–150, 151, 218, 227–228, 413, 426, 428
- Taxonomy Based Questionnaire (Software Engineering Institute), 119–120

- Team(s) and team members:
 - assessing team health, 277–278
 - challenges of teamwork, 252–256
 - cohesion requirements, 253–254
 - communication with, 40–41, 298–306
 - control checklist, 326
 - customers as, 40
 - defined, 252
 - definition checklist for, 81, 89–90
 - development stages, 262–264
 - environment for, 257, 258, 264–276
 - high-performance team
 - framework, 256–260, 292–293
 - integrated product teams (IPTs), 226–227, 246–247
 - job satisfaction, 292
 - leadership of, 257, 259, 260–264, 292–293
 - problem-solving skills, 257, 258–259, 278–291
 - role of, 5, 251
 - as stakeholders, 40–41
 - task assignment, 301, 315, 317
- Team leader, 39–40
- Technical lead, 39–40
- Technical skills, 18–19
- Technology, 360, 362, 369–372, 382
- Time-scaled network, 164, 168
- Top-down design, 227–228, 246–247
- Top-down estimating, 192–193, 194, 195. *See also* Fixed-phase scheduling
- Toyota Production System, 410–411
- Traceability, 404
- Trigger events, 112
- Triple constraint. *See* Cost-schedule-quality equilibrium
- Tuckman, Bruce, 262–263, 264
- Tynet, Inc., 208–211

- Undertime, 233
- Unknown unknowns, 96, 116
- Use case specification, 398, 399
- User requirements, 397, 398, 399
- U.S. government, 16–17, 47, 337

- Validation, 402
- Value:
 - earned value reporting, 335–342, 439
 - Lean methods, 409–412, 415
 - product, 235
- Value stream analysis, 410
- Vendors, 141, 142, 218, 230–231
- Verification, 402
- Volunteers, managing, 294–295, 354–355
- Voting, 283

- Walk-throughs, 139
- Waste, eliminating. *See* Lean methods
- Womack, James, 409
- Work breakdown structure (WBS):
 - criteria for, 133–134
 - development of, 129–137, 140–142, 428, 429
 - earned value reporting and, 340–341, 439
 - models for, 126, 127–129, 131–133, 134, 135, 138, 140–141
 - planning checklist, 217
 - project management activities, 137–138
 - purpose of, 125–126, 142
 - tasks on, types of, 126, 129, 431–432
 - vendor-provided, 141, 142
- Work package(s):
 - completion criteria, 138–139, 149, 331–332, 350, 352, 354
 - defined, 126, 129
 - earned value reporting and, 340–341, 439
 - estimating, 150–157, 175, 205, 351
 - naming, 134, 140, 142
 - organizing, 131–135
 - schedule progress and, 329–333
 - size of, 135–137, 140, 142, 354
 - task relationships, 147–150, 151, 218, 227–228, 413, 426, 428

- 0–50–100 Rule, 330–331
- Zero float, 161, 164, 165