

# Index

## A

acceptance (risk response strategy), 272 accepting change requests, 430-431 accountability in preliminary scope statement, 33 achievements. See drivers action items. 121 alarms for risks, 276 alliance building, 92-94 case study, 96 analogous estimating, 135-136 analyst (role of project manager), 4 appraisal costs, 180 case study, 385-387, 394 approvers, 62 archiving project documentation, 446-447 assigning resources, 304-309, 312-314 assumptions in preliminary scope statement, 32 audience identification (product requirements), 62-65 recipients of communication identifying, 210-216 types of effective communication with, 229-231, 236-237, 242-243.248

audits, quality, 177, 378-380 case study, 437 authority establishing, 45-47 in preliminary scope statement, 33 avoidance (risk response strategy), 272

## B

backward passes, calculating critical paths, 295-296 baseline and control phase (product requirements), 61, 83-84 baselined project plan, change-control process and, 422 baselines case study, 418 cost baselines, 349-350, 371 case study, 387-388 creating, 370-373 cost baselines, 371 product requirements baselines, 372 quality baselines, 372 schedule baselines, 371 Microsoft Project, 371 quality baselines, 187 bottom-up estimating (definitive estimates), 36, 133-136

brainstorming deliverables, 55-56 for estimating, 161-163 gathering product requirements, 71-72 in-scope and out-of-scope elements, 57-58 risks, 261-263 budget crashing, 347 budget reconciliation, 347 budget crashing, 347 descoping, 348-349 budgets, 332 building, 332 cost per task, 336-344 resource rates, 334-336 work effort estimates, 333 case study, 384-388, 394-395, 415-418 resources, 358-366 change-control process and, 422 cost baselines, 349-350 estimates, 36, 134 cost estimating and, 153 fees, 346-347 politics of project management, 352-353 reserves, 344 managerial contingency, 346 project reserves, 344-345 variances, impact of, 407-408 business requirements, 76

## С

calculating critical paths, 293-294 backward passes, 295-296 floats, 296-297 forward passes, 294-295 calendar estimates, 134 case study appraisals, 385-387, 394 baselines, 418 budgets, 384-388, 394-395, 415-418 resources, 358-366 communication plan, 284-289, 327 cost estimates, 195-205 critical path, 356-357 estimates, 165-168 first team meeting, 124-129 lessons learned, 436-440 network diagrams, 165-168 politics of project management, quality-planning process and, 205 product requirements for, 95-97 project closing, 452-456 project plan development for, 48-51 quality planning, 251-254 resource estimates, 195-200 risk identification, 356-357 risk strategy, 328-329 rumors, handling, 328-330 scheduling, 353-357 setup for, 15-16 team norms, 251-252 variance monitoring, 416 CCB (Change Control Board) accepting/rejecting change requests, 430-431 politics of project management, 434-436 celebrations after closing project, 449 challengers, 63, 92, 236 alliance building with, 93 champions, 63, 92, 236 alliance building with, 93

*Index* **481** 

Change Control Board (CCB) accepting/rejecting change requests, 430-431 politics of project management, 434-436 change requests accepting/rejecting, 430-431 estimating impact on project, 427-430 logging, 427, 431-432 notifying decision on, 431 receiving, 424-426 reviewing, 427 change-control process case study, 436 change requests accepting/rejecting, 430-431 estimating impact on project, 427-430 logging, 427, 431-432 notifying decision on, 431 receiving, 424-426 reviewing, 427 importance of following, 424 monitoring implementation of changes, 411 politics of project management, 434-436 of product requirements, 84 steps, list of, 424-425 team, effect on, 433-434 team norms and, 423-424 what to control, 422-423 chartering projects, 20 formal chartering, 20-22 informal chartering, 23 "climbers" (politics of project management), 193

closing projects archiving project documentation, 446-447 case study, 452-456 celebrations, 449 lessons learned, 447-449 95 percent phenomenon, 449-451 presentation for executives, 451-452 collecting work performance information. 377 communication exercise to demonstrate, 208-209 planning, 209-210 case study, 284-289 contents of communication, 226, 229 delivery techniques, 236 politics and, 249-251 reasons for communicating, 223 recipients of communication, 210-216, 229-231, 236-237, 242-243, 248 team aspects, 248-249 timing of communication, 216-221 politics of project management, 382-383 communication plan case study, 327 project execution, 377 in project plans, 39 rumors, 414-415 communication template, 210 communicator (role of project manager), 4 completeness of global requirements, 82 completion criteria, creating, 104-107

compressing schedules, 314 crashing, 314-315 descoping, 317-322 fast-tracking, 316-317 confirming phase (product requirements), 61, 80-83 conflict, forcing, 191 conformance, cost of, 180 consistency of global requirements, 82 constraints in preliminary scope statement, 32 controlling product of project, 411 project risks, 410-411 rumors, 413-415 variances budget variances, 407-408 case study, 416 corrective action, 408-410 earned value technique, 403-406 schedule variances, 406-407 status meetings, 398-399 variance analysis, 400-402 coordinator (role of project manager), 5 core team members case study, 96-97 first meeting, 117-122 case study, 124-129 private meetings with, 91-92 corporate strategy, 6-7 corporate structures, types of, 9-11 corrective action (variances), 408 critical-path tasks, 408-409 noncritical-path tasks, 409-410 cost, as triple constraint, 27-29 cost baselines, 349-350, 371 case study, 387-388 cost elements in project plans, 39

cost estimates, 153-161 case study, 201-204 order of magnitude estimates, 36-38 in preliminary scope statement, 33 types of, 35-36 cost of conformance, 180 cost of nonconformance, 181-188 cost of quality cost of conformance, 180 cost of nonconformance, 181-188 defined, 180 cost per task, 336-344 case study, 387-388 Cost Performance Index, 405 crashing (schedule compression), 314-315 critical paths, calculating, 293-294 backward passes, 295-296 case study, 298-302, 356-357 floats, 296-297 forward passes, 294-295 critical path tasks, corrective action, 408-409 cross-functional management, 164 cultural requirements, 80 current situation review (gathering product requirements), 68-70 customers, 62

#### D

day-to-day operations, projects versus, 2 decision logs, 190 definitive estimates (bottom-up estimates), 36, 133-136 deliverables case study, 96 creating, 55-57 in preliminary scope statement, 33 delivery techniques (communication), 236 dependencies, types of, 108-109 dependency relationships, 109-111 descoping budget reconciliation, 348-349 schedule compression, 317-322 description of product in scope statement, 58 desk testing (project plans), 90 detailed estimates (bottom-up estimates), 36, 133-136 diagram of work in product requirements setup, 65-67 dictionary (WBS), 88 "diggers" (politics of project management), 194 discretionary dependencies, 108 distraction of change-control process on team, 433-434 documentation archiving, 446-447 as deliverables, 56 MOPs (measures of performance), 23-24 drafting, 31 drivers. 25-26 restrictions, 26-27 scope of, 29-30 triple constraints and, 27-29 preliminary scope statements, 32-35,54 project plans, 38-41 case study, 48-51 desk testing, 90 sections of, 38-40 documentor (role of project manager), 5 drafting MOPs, 31

drivers of MOPs, 25-26 duration estimates, 134, 148-152 preset duration, negotiating, 163-164 work effort estimates versus, 153

## E

early risks in preliminary scope statement, 33 earned value technique, 403-406 ego, restraining (interpersonal skills), 13 empathy (interpersonal skills), 13 empowering team members, 101 encouraging team members, 412-413 end dates, calculating critical paths, 293-294 backward passes, 295-296 case study, 298-302 floats, 296-297 forward passes, 294-295 estimates. See also estimating budget estimates, 134 cost estimates and, 153 calendar estimates, 134 case study, 165-168 cost estimates, 153-161 case study, 201-204 order of magnitude estimates, 36-38 in preliminary scope statement, 33 types of, 35-36 created by boss, 164-165 definitive estimates, 133-134 duration estimates, 134, 148-152 preset duration, 163-164 work effort estimates versus, 153 optimistic estimates, 137 order of magnitude estimates, 132, 332 creating with analogous estimating, 135-136

pessimistic estimates, 137 politics and, 163-165 resource estimates, 141-148 case study, 195-200 what to estimate, 140 work effort estimates, 133-134, 333 cost estimates and, 153-156 duration estimates versus, 153 estimating. See also estimates analogous estimating, 135-136 bottom-up estimating, 136 brainstorming sessions for, 161-163 change requests' impact on project, 427-430 defined, 132 expert judgment estimating, 140 parametric modeling, 136 PERT (Program Evaluation and Review Technique) estimating, 138-140 reserve analysis, 137-140 three-point estimating, 137 events, triggering communication by, 221 executing projects, 370 baselines, 370-373 cost baselines, 371 product requirements baselines, 372 quality baselines, 372 schedule baselines, 371 collecting work performance information, 377 communication plans, 377 gathering lessons learned, 378 implementing approved changes, 377 installing methods and procedures, 377 managing human resources, 376 managing resources, 377 performing risk management, 378 performing tasks of project, 376

politics of project management, 382-383 quality audits, 378-380 reporting on project information, 377 rhythm, establishing, 373-374 issues management, 374-376 status meetings, 374 staffing projects, 376 teams, 380-382 training resources, 376 validating project deliverables, 378 execution monitoring and controlling in project plans, 39 **Executive Ostrich (executive** personality), 382 executive personalities, 382-383 executive team. See also politics of project management closing presentation for, 451-452 communication planning, 249-251 quality-planning process and, 191-194 case study, 205 risk management, 281-283 executive team norms, 122-124 expert judgment estimating, 140 external cost of nonconformance, 181 external dependencies, 108

## F

fast-tracking schedule compression, 316-317 fear of completion, 450 fear of the future, 450 fees, 346-347 finish-to-finish relationships, 110 finish-to-start relationships, 109 floats, calculating, 296-297 flow of work, 322-324 forcing conflict, 191 formal chartering, 20-22 formal risk gathering, 261-263 forming stage (team development), 117-122 forward passes, calculating critical paths, 294-295 functional organizations, 9-10 functional requirements, 76-78

## G

Gantt chart, 400 gathering phase (product requirements), 61, 68-80 levels of requirements, 76-80 tools and techniques for, 68-74 writing requirements, 74-76 global requirements, confirming, 82-83

## Η

hierarchy of project management, 6-8 human resources, managing, 376. *See also* teams human resources strategy in project plans, 39

## I–J

identifying risks, 410 impact of risks, determining, 266-267 implementation preparation readiness reviews, 442-445 scope verification, 445-446 turnover (of project deliverables), 446 implementing changes (project execution), 377 impromptu risk gathering, 263 in-scope elements, brainstorming, 57-58

incremental effect (change requests), 430 individual requirements, confirming, 81-82 industry quality standards, 171-172 influence (interpersonal skills), 13 influencers, 63, 92, 236 alliance building with, 93 informal chartering, 23 informal risk gathering, 263-265 installing methods and procedures, 377 internal cost of nonconformance, 181 interpersonal skills, list of, 12-14 interviewing (gathering product requirements), 71 introductions in case study, 125 at first team meeting, 118-119 ISO 9000 quality standard, 171 issues, defined, 121 issues management case study, 437 project execution, 374-376

## K–L

lag time, 111 leader (role of project manager), 5 legal requirements, 80 lessons learned, 447-449 case study, 436-440 gathering, 378 leveling, resources, 304-309, 312-314 life cycles communication timing and, 216-220 defined, 11 product management life cycle, 12 project management life cycle, 11-12 loaded salary rates, 335 logging change requests, 427, 431-432 look-and-feel requirements, 79

#### Μ

Mad Hatter (executive personality), 382 maintainability requirements, 79 management phase (product requirements), 83-84 management skills defined. 3 resources for. 3 manager (role of project manager), 5 managerial contingency, 346 Managers and Leaders: Are They Different? (Zaleznik), 3 managing human resources, 376 resources, 377 mandatory dependencies, 108 master risk identification list (PERT estimates), 302 matrix management, 164 measures of performance (MOPs), 23-24 drafting, 31 drivers, 25-26 restrictions, 26-27 scope of, 29-30 triple constraints and, 27-29 meeting-management techniques, 120-122 methods, installing, 377 **Microsoft Project** baselines, 371 critical paths, 301 leveling resources, 314 mind mapping (gathering product requirements), 72-73

mitigation (risk response strategy), 272 modifiability of global requirements, 83 monitoring change control implementation, 411 changes, 431-432 product of project, 411 project risks, 410-411 variances budget variances, 407-408 case study, 416 corrective action, 408-410 earned value technique, 403-406 schedule variances, 406-407 status meetings, 398-399 variance analysis, 400-402 MOPs (measures of performance), 23-24 drafting, 31 drivers, 25-26 restrictions, 26-27 scope of, 29-30 triple constraints and, 27-29 motivating teams, 350-351

## Ν

negative schedule variance, 404 negotiating as interpersonal skill, 13 preset project duration, 163-164 for team members, 41-43 network diagrams case study, 165-168 creating, 111-117 quality planning, incorporating, 175-178 95 percent phenomenon, 449-451 nonconformance, cost of, 181-188 noncritical path tasks, corrective action, 409-410 nonfunctional requirements, 76-80 norming stage (team development), 117 norms, following (interpersonal skills),

13. See also team norms notifying change request decisions, 431 numbering WBS (work breakdown structure), 89

#### 0

objectives in preliminary scope statement, 32 offices (PMOs), 8 operational requirements, 79 operations, projects versus, 2 OPM3® (Organizational Project Management Maturity Model), 9 optimistic estimates, 137 order of magnitude estimates (top-down estimates), 36-38, 132, 332 creating with analogous estimating, 135-136 organization quality standards, 172 **Organizational Project Management** Maturity Model (OPM3®),9 organizational strategy, 6-7 organizational structures, types of, 9-11 out-of-scope elements, brainstorming, 57-58

## Р

padding estimates in reserve analysis, 137 parametric modeling, 136 percentages in reserve analysis, 137 performance measures. *See* MOPs performance requirements, 79 performing risk management, 378

performing stage (team development), 117 PERT (Program Evaluation and Review Technique) estimating, 138-140 schedules, 302-303 pessimistic estimates, 137 pessimistic team members, risk management and, 279-281 planning communication, 209-210 case study, 284-289 contents of communication, 226, 229 delivery techniques, 236 politics and, 249-251 reasons for communicating, 223 recipients of communication, 210-216, 229-231, 236-237, 242-243, 248 team aspects, 248-249 timing of communication, 216-221 project plans, 38-41 case study, 48-51 desk testing, 90 sections of, 38-40 quality planning, 174-175 case study, 251-254 defined, 170 in network diagram, 175-178 politics of, 191-194, 205 for teams, 188-191 response planning (for risks), 272-279 risk strategy, 258-260 teams, 41-43 PMBOK® Guide, 2 cost of quality, 180 quality planning, 170 PMOs, defined, 8

political requirements, 80 politics of project management, 14-15 alliance building, 92-94 authority, establishing, 45-47 budgets, 352-353 CCB (Change Control Board), 434-436 closing presentation for executives, 451-452 communication planning, 249-251, 414-415 communication with executives, 382-383 estimates and, 163-165 project execution, 382-383 quality-planning process and, 191-194 case study, 205 risk management, 281-283 rumor control, 413-415 case study, 418 schedules, 326 stakeholder identification, 43-45 team norms, 122-124 portability requirements, 79 portfolio management, defined, 7 portfolios, defined, 7 precedence diagramming, 111 predecessors, 109 preliminary scope statements, 32-35, 54 preparing for implementation readiness reviews, 442-445 scope verification, 445-446 turnover (of project deliverables), 446 preset project duration, negotiating, 163-164 prevention costs, 180 probability of risks, determining, 267-271 problem solver (role of project manager), 5

procedures, installing, 377 procurement plans in project plans, 39 product description in scope statement, 58 product development life cycle, communication timing and, 216-220 product elements, 136 building library of, 161 product management life cycle, 12 product of projects, monitoring and controlling, 411 product requirements, 60-85 baseline and control phase, 61, 83-84,372 case study, 95-97 change-control process and, 422 characteristics of, 74-75 confirming phase, 61, 80-83 gathering phase, 61, 68-80 levels of requirements, 76-80 tools and techniques for, 68-74 writing requirements, 74-76 in preliminary scope statement, 32 setup phase, 60-67 audience identification, 62-65 diagram of work, 65-67 product standards, 172 **Program Evaluation and Review** Technique (PERT) estimating, 138-140 schedules, 302-303 program management, defined, 8 programs, defined, 7 progressive elaboration, 32 project closing archiving project documentation, 446-447

case study, 452-456 celebrations, 449 lessons learned, 447-449 95 percent phenomenon, 449-451 presentation for executives, 451-452 project costs, 35-37 project customers, 62 project deliverables, validating, 378 project documentation archiving, 446-447 as deliverables, 56 MOPs (measures of performance), 23-24 drafting, 31 drivers, 25-26 restrictions. 26-27 scope of, 29-30 triple constraints and, 27-29 preliminary scope statements, 32-35,54 project plans, 38-41 case study, 48-51 desk testing, 90 sections of, 38-40 project execution, 370 baselines, 370-373 cost baselines, 371 product requirements baselines, 372 quality baselines, 372 schedule baselines, 371 collecting work performance information, 377 communication plans, 377 gathering lessons learned, 378 implementing approved changes, 377 installing methods and procedures, 377 managing human resources, 376 managing resources, 377 performing risk management, 378

performing tasks of project, 376 politics of project management, 382-383 quality audits, 378-380 reporting on project information, 377 rhythm, establishing, 373-374 issues management, 374-376 status meetings, 374 staffing projects, 376 teams, 380-382 training resources, 376 validating project deliverables, 378 project execution plan in project plans, 39 project management defined, 2-3 hierarchy of, 6-8 project management life cycle, 11-12 communication timing and, 216-220 project management process standards, 172 project managers, roles of, 3-5 project organization in preliminary scope statement, 33 project plans, 38-41 case study, 48-51 desk testing, 90 sections of, 38-40 project reserves, 344-345 project risks brainstorming, 261-263 defined, 121 identifying, 260, 410 case study, 356-357 formal risk gathering, 261-263 informal risk gathering, 263-265 impact of, determining, 266-267 monitoring and controlling, 410-411

probability of, determining, 267-271 residual risks, monitoring for, 410 response planning, 272-279 project scope statement, example of, 59 project sponsors, 62 projectized organizations, 10-11 projects chartering, 20 formal chartering, 20-22 informal chartering, 23 day-to-day operations versus, 2 defined, 2-3 in project management hierarchy, 8 staffing, 376 tracking. See monitoring public relations. See politics of project management

## Q

quality, cost of cost of conformance, 180 cost of nonconformance, 181-188 defined, 170, 180 quality audits, 177, 378-380 case study, 437 quality baseline, 187, 372 quality management in project plans, 39 standards, 172 quality philosophies, 170-171 quality planning, 174-175 case study, 251-254 defined, 170 in network diagram, 175-178 politics of, 191-194 case study, 205 for teams, 188-191 quality policies, creating, 173-174 quality standards, 171-172

## R

readiness reviews, 442-445 receiving change requests, 424-426 recipients of communication, 210-216, 229-231, 236-237, 242-243, 248 reconciling budgets, 347 budget crashing, 347 descoping, 348-349 rejecting change requests, 430-431 relevance of individual requirements, 81 reporting facts to team members, 412 project information, 377 reporting structures, types of, 9-11 requests for change accepting/rejecting, 430-431 estimating impact on project, 427-430 logging, 427, 431-432 notifying decision on, 431 receiving, 424-426 reviewing, 427 requirements, 60-85 baseline and control phase, 61, 83-84, 372 case study, 95-97 change-control process and, 422 characteristics of, 74-75 confirming phase, 61, 80-83 gathering phase, 61, 68-80 levels of requirements, 76-80 tools and techniques for, 68-74 writing requirements, 74-76 in preliminary scope statement, 32 setup phase, 60-67 audience identification, 62-65 diagram of work, 65-67 reserve analysis, 137-140

reserves, building budgets, 344 managerial contingency, 346 project reserves, 344-345 residual risks, monitoring, 410 resource estimating, 141-148 case study, 195-200 resource rates, 334-336 case study, 200, 386 in cost estimating, 157-158 resources assigning and leveling, 304-309, 312-314 budgets (case study), 358-366 managing, 377 training, 376 response planning (for risks), 272-279 restrictions of MOPs, 26-27 results, 25-26 reviewing change requests, 427 current situation (gathering product requirements), 68-70 rewarding team members, 350-351, 412-413 case study, 437 rhythm, establishing (project execution), 373-374 issues management, 374-376 status meetings, 374 risk management performing, 378 pessimistic team members and, 279-281 politics and, 281-283 risk owners, 276 risk plan in project plans, 39 risk process, monitoring, 411

risk strategy, 258-260 in case study, 328-329 identifying risks, 260 formal risk gathering, 261-263 informal risk gathering, 263-265 risk triggers, monitoring, 410 risks brainstorming, 261-263 defined, 121 identifying, 260, 410 case study, 356-357 formal risk gathering, 261-263 informal risk gathering, 263-265 impact of, determining, 266-267 monitoring and controlling, 410-411 probability of, determining, 267-271 residual risks, monitoring for, 410 response planning, 272-279 rules of engagement. See team norms rumors case study, 328-330, 418 controlling, 413-415

## S

salary rates, 334-336 case study, 200, 386 in cost estimating, 157-158 schedule baselines, 371 schedule compression, 314 crashing, 314-315 descoping, 317-322 fast-tracking, 316-317 Schedule Performance Index, 405 schedule variance, 405 impact of, 406-407 negative schedule variance, 404 schedules. See also variances assigning and leveling resources, 304-309, 312-314 case study, 353-357 change-control process and, 422 compressing, 314 crashing, 314-315 descoping, 317-322 fast-tracking, 316-317 end dates, 293 calculating critical paths, 293-297 flow of work, 322-324 PERT estimates, 302-303 politics of project management, 326 in project plans, 38 teams, 324-326 scope deliverables, creating, 55-57 inclusions versus exclusions, 57-58 of MOPs. 29-30 preliminary scope statement, 32-35, 54 product description in, 58 project scope statement example, 59 as triple constraint, 27-29 scope information in project plans, 38 scope verification, 445-446 security requirements, 79 sequencing tasks, 107 dependencies, 108-109 dependency relationships, 109-111 network diagram, creating, 111-117 setup phase (product requirements), 60-67 audience identification, 62-65 diagram of work, 65-67 shadowing (gathering product requirements), 70-71

staffing projects, 376 teams, 41-43 stakeholders, 62 identifying, 43-45 standards, quality standards, 171-172 start-to-finish relationships, 110 start-to-start relationships, 109 status meetings case study, 438 monitoring variances, 398-399 project execution, 374 storming stage (team development), 117 moving past, 188-191 strategist (role of project manager), 4 strategy, 6-7 successors, 109

## Т

task list, creating, 100-104 tasks completion criteria, creating, 104-107 duration of, 100 empowering team for, 101 sequencing, 107 dependencies, 108-109 dependency relationships, 109-111 network diagram, creating, 111-117 team members, 62 team norms, 119-120 case study, 125, 251-252 change-control process and, 423-424 communication planning and, 248 for executives, 122-124 quality planning process and, 188-191 team-building exercises in case study, 125 at first team meeting, 119

teams change-control process, effect on team, 433-434 communication planning, 248-249 core team members case study, 96-97, 124-129 first meeting, 117-122 private meetings with, 91-92 empowering for tasks, 101 estimating brainstorming sessions, 161-163 interpersonal skills, list of, 12-14 motivating, 350-351 phases of development, 117 planning, 41-43 project completion, 449-451 project execution, 380-382 quality planning process and, 188-191 reporting facts, 412 reviewing change requests, 427 rewarding and encouraging, 412-413 risk management, 279-281 schedules, 324-326 training, 380-382 templates, communication template, 210 testing (project plans), 90 three-point estimating, 137 time, as triple constraint, 27-29 time scales for duration estimates, 149 timing of communication, 216-221 top-down estimates (order of magnitude estimates), 36-38, 132, 332 creating with analogous estimating, 135-136 tracking change control implementation, 411 changes, 431-432 product of project, 411

project risks, 410-411 variances budget variances, 407-408 case study, 416 corrective action, 408-410 earned value technique, 403-406 schedule variances, 406-407 status meetings, 398-399 variance analysis, 400-402 training resources, 376 teams, project execution, 380-382 transfer (risk response strategy), 272 triggering communication by events, 221 triple constraints, MOPs and, 27-29 Tuckman, Bruce, 117 turnover (of project deliverables), 446

## U–V

understandability of individual requirements, 81 usability requirements, 79 validating project deliverables, 378 variance analysis, 400-402 variances, monitoring budget variances, 407-408 case study, 416 corrective action, 408-410 earned value technique, 403-406 schedule variances, 406-407 status meetings, 398-399 variance analysis, 400-402 verifying phase (product requirements), 61,80-83 version control of product requirements, 84 viability of individual requirements, 81

#### W–Z

WBS (work breakdown structure) completion criteria, creating, 104-107 creating, 86-90 in project plans, 38 task list, creating, 100-104 work effort estimates, 133-134, 333 cost estimating and, 153-156 duration estimates versus, 153 work flow, 322-324 work package level of WBS, 86 work packages, creating, 87-88. *See also* tasks writing requirements, 74-76 Zaleznik, Abraham, 3