

Index

• A •

A3 reports
defined, 369
single-page format, 38
visual management tool,
248–249

A3 reviews, gemba
walks, 272

acceptance phase,
organizations, 56–57

accounting systems,
expectations, 358

act phase, 190, 245

activity monitoring,
standardized work
process, 241

activity network, 259

adaptability
organization attribute, 62–63
team characteristic, 76

adjourning, teaming
phase, 77

adjustments, standardized work
process, 241

administration systems,
298–299

affinity diagram, 259

agile-ability, software
product, 294

American Society of Quality, 367

American Society of Training
& Development, 368

andon
defined, 369
information sharing
method, 349
visual management tool,
36, 245–246

annual planning table (APT),
hoshin kanri (direction
setting), 264

annual plans, hoshin
kanri, 265

annual review, hoshin kanri,
266–267

applied skills, Lean students, 97

appointments, healthcare
business study, 327–331

approach identification, rollout
element, 102

ARIS
Lean process facilitation
software, 273
value stream mapping tool, 141

arrow diagram, JUSE new
seven tools, 259

ASQ, Lean conferences, 364

Assembly Magazine, 366

Association for Manufacturing
Excellence (AME)
Lean certification, 97
Lean events, 363

Association for Operations
Management, 367

attitudes, resistance to
change, 68–69

automation
automation with a human
touch, 38
quality at the source, 39–40
workstation benefits, 226

autonomous maintenance,
flow blockage
prevention, 228

awareness, rollout element,
101–103

• B •

backflushing, inventory
control, 234

Balanced Scorecard
customer card, 268–269
financial card, 268–269
go and observe, 270
learning card, 268–269
measurement tool, 41
principles, 269
process card, 268–269
3 Gen, 270–271
vision and strategy model,
267–268

bar charts, data display,
254–255

been there, done that,
resistance to change
attitude, 69

behavior standards, 62

benchmarking, customer
focused tools, 205–207

Black Belts, Six Sigma
practitioners, 23

blockware, software, 294

bottleneck operations
identifying, 224
kaizen event target, 243
processes, 172

box score, 139, 152–154, 208

breakthrough kaizen.
See kaikaku

Brounstein, Marty
*Coaching & Mentoring
For Dummies*, 3
*Managing Teams For
Dummies*, 3

Buckingham, Marcus (*Now,
Discover Your Strengths*), 76

built-in learning,
customer satisfaction
practices, 293

business fundamentals table
(BFT), 264

business measures, 263

business objectives, 263

Business Process Management
(BPM), 24–25, 277

Business Process Management
Initiative, 368

Business Process
Trends, 368

business strategy, Lean
versus traditional mass
production, 10

• C •

call centers, attrition case
study, 340–343

- capability, manager's
 - characteristic, 83
- causation, check sheets, 254
- Cause-and-Effect (C&E), 159–160, 251–252
- celebration recognition, 176, 197
- Center for Competitive Change, 365
- change over time, box score metric, 153
- charging forward phase, 58–59
- Check (Study) phase, 189–190
- check phase, kaizen workshop, 245
- check sheets, 253–254
- clear processes, team characteristic, 76
- Clifton, Donald O. (*Now, Discover Your Strengths*), 76
- Coaching & Mentoring For Dummies* (Marty Brounstein), 3
- collaboration, desirable team environment, 77–78
- College of Business of Utah State University, Shingo Prize, 363
- commitment, 75, 82
- communication displays, 36
- communications
 - customer feedback, 289
 - gemba walks, 272
 - overcoming
 - complacency, 355
 - rollout awareness, 101
 - value-stream map (VSM) purpose, 137
 - voice of the customer (VOC), 202–203
- communications development, 79–81
- compensation systems, HR function, 298
- complacency, overcoming, 354–355
- concept-to-launch, Lean versus traditional mass production, 10
- concurrent engineering (CE)
 - customer satisfaction element, 290–291
- Design for Assembly (DFA), 292–293
- Design for Manufacturability (DFM), 292–293
- concurrent product development. *See* concurrent engineering
- congruency, manager's characteristic, 82
- consultants, locating, 364–365
- consumers
 - behavior style types, 128–129
 - defined, 369
 - demand mapping, 130–132
 - healthcare business appointments, 327–331
 - response types, 127–129
 - value determinations, 127–132
- contacts, customer management
 - challenge, 284
- containment, quality at the source, 39–40
- continuous flow, 30–32, 36, 369
- continuous improvement orientation, 76
- continuous incremental change, 53
- continuous learning, Lean concept, 11
- continuous process improvement (CPI), 23–25
- contractual ties, supplier links, 302
- control charts, 257–258
- conveyance (transport), waste form, 42
- correction, waste form, 43
- correlation, scatter plots, 254–255
- cost accounting systems, 40–41
- cost breakdown, box score metric, 153
- Council of Supply Chain Management Professionals, 367
- cowboy individualism, 60
- creativity, team characteristic, 76
- critical path, value stream mapping, 149
- cross-training boards, 36
- cross-training charts, 246–248
- culture facilitators, HR function, 298
- culture level, Lean implementation processes, 15
- current state
 - activity identification, 146–148
 - case study, 167–170
 - engineering perspectives, 165–167
 - 5-Whys, 160
 - information flow, 151–152, 167
 - investigating value-stream map, 158–170
 - Ishikawa diagram, 159–160
 - material flow, 164–165
 - non-value-added activities, 149–150
 - organization assessment, 52–53
 - overall lead time, 150
 - process times, 148–149
 - quality practitioners, 163–164
 - sensei's view, 162–163
 - spaghetti diagrams, 162
 - Type-2 muda identification, 161–162
 - value stream mapping, 29, 146–152
 - value-added activities, 149–150
- current-state value-stream map, 369
- customer awareness, 355
- customer card, Balanced Scorecard, 268, 269
- customer demand, Lean concept, 12
- customer focused tools, 202–207
- customer impact, starting point, 100
- customer information stations, 36
- customer perspective, 137
- customer satisfaction, 53
- customer value, 11–12, 137
- customers
 - built-in learning, 293
 - defined, 370

- defined as product or service recipient, 121
- Design for Assembly (DFA), 292–293
- Design for Manufacturability (DFM), 292–293
- engineering processes, 290–291
- feedback, 289
- feel the force, 347
- foundation element, 28–29
- identifying, 121–123
- Kano modeling, 203–204
- management challenges, 284
- marketing strategies, 284–285
- non-value-added
- determinations, 118–119
 - primary focus, 283–284
 - product benchmarking, 205–207
 - product/service satisfaction, 287–294
 - requirement specifications, 125–126
 - sales processes, 285–286
 - satisfaction elements, 123–125
 - service processes, 286–287
 - SIPOC diagram, 122
 - software product
 - development, 293–294
 - standardization, 291–292
 - systems approach, 289
 - value determinations, 116, 123–126
 - value stream criteria, 28–30
 - value stream flow path, 350–351
 - value-added determinations, 117–118
 - voice capturing tools, 202–203
- cycle time, 240, 370
- **D** •
- dashboards, 276–277
- DeCarlo, Neil (*Six Sigma For Dummies*), 3, 23
- decision making, team characteristic, 76
- deep reflection, manager's, 82
- defective location plot, 253–254
- defects
- check sheets, 253–254
 - defined as waste form, 43
 - healthcare field waste form, 318
 - product waste form, 184
 - service waste form, 313
- Define-Measure-Analyze-Improve-Control (DMAIC), Six Sigma, 23
- delay (waiting), waste form, 42
- delighters, customer satisfaction, 124
- delivery routes, material handling, 235
- delivery windows, incoming materials, 235
- demand information, supplier flow, 303
- demand, customer value measurement, 285
- Deming, W. Edward's Deming cycle, 185
- Lean development history, 18
- design engineering, current state evaluation, 166
- Design for Assembly (DFA), 292–293
- Design for Assembly and Manufacturability (DFA/DFM), 227
- Design for Manufacturability (DFM), concurrent engineering, 292–293
- Design of Experiments (DOE), 44
- design, Lean versus traditional mass production, 10
- development information, supplier flow, 303
- development systems, HR function, 298
- deviation response, standardized work rules, 239
- digital cameras, support tools, 93
- direct labor, traditional cost accounting systems, 40–41
- direction phase, organizations, 57–58
- direction setting. *See* hoshin kanri (direction setting)
- direction, team characteristic, 75
- DISC Classic Profile, assessment tool, 76
- display boards, 246–247
- distribution centers, supplier logistics, 304
- do phase, 189, 244
- do process, 265
- doesn't apply here, resistance to change attitude, 69
- **E** •
- Economy, Peter (*Managing For Dummies*), 3
- effective communications, 76
- electronic data interchange (EDI), 303
- employee capability building, 12
- employee injuries, Lean versus traditional mass production, 10
- employee involvement teams, 226
- employees, 78, 340–343
- energy, transaction process, 283
- engineering disciplines, 165–167
- engineering processes, 290–291
- enterprise level
- above and beyond the ops floor, 282
 - kaizen implementation, 282
 - Lean implementation processes, 14
 - software tools, 213–214
 - transaction processes, 282–283
 - value-stream manager, 283
- enterprise value streams, 98
- equipment check, 240
- equipment engineering, 166–167
- equipment, standardized work rules, 239
- error-proof (poka-yoke), 227–229, 241

everyday improvement, Lean concept, 11
 Evolving Excellence, 363
 eVSM, Lean tools, 366
 excess processing, healthcare field waste form, 318
 external facilitators, team building, 77
 extra processing, 43, 185, 313

• F •

facilitation software, 273–274
 facilitators, 77, 364–365
 facilities, transaction process, 283
 fact-based representation, value-stream map (VSM) purpose, 137
 Failure Mode Effects Analysis (FEMA), 227
 fear of failure, resistance to change, 69
 fear of the unknown, overcoming roadblocks to success, 61
 feedback, 284, 289, 294
 finance systems, 298–299
 financial card, Balanced Scorecard, 268, 269
 Fishbone diagram
 cause and effect tool, 251–252
 current state evaluation, 159–160
 5S process
 clean workplace, 84
 defined, 369
 flow steps, 216–219
 service businesses, 314
 5 Whys
 current state evaluation, 160
 defined, 369
 jidoka root cause analysis, 37
 problem solving tool, 250–251
 value stream analysis, 209–210
 flip charts, support tools, 93
 flow
 blockage prevention, 226–231
 customer value stream, 350–351
 5S process steps, 216–219
 foundation element, 30–32
 Group Technology (GT), 220–221
 inventory reduction, 308–309
 just in time (JIT), 36–37
 operational stability, 35–36
 quality at the source, 307
 supplier information, 303
 teams, 307–308
 work cells, 307
 work modules, 221–226
 flow kaizen. *See* kaikaku
 Flowcharter, facilitation software, 273
 flowcharts, data display, 31–32, 258
 focus, 82, 90
 form and fit, 125
 formal principles, organization element, 50
 forming, teaming phase, 77
 Franklin, Benjamin, Lean history, 13
 Free Management Library, 368
 front-end processes, 284
 frontline employees, service businesses, 315
 fulfillment processes, customer sales, 286
 functionality, customer requirement, 125
 future state
 kaizen burst, 173–174
 laboratory queuing, 325–326
 value stream mapping, 172–177, 180, 370

• G •

Gantt charts, hoshin table element, 264
 Gemba Panta Rei, 363
 gemba walks, 89, 270–273
 gemba
 A3 sheet development, 248
 customer service process, 287
 defined, 188, 370

genchi genbutsu (going and seeing)
 defined, 370
 manager's characteristic, 83, 348
 software product development, 294
 General Electric, Six Sigma adoption, 23
 Gilbreth, Frank, Lean development, 18
 Gilbreth, Lillian, Lean development, 18
 global value, 12, 13
 goal setting, hoshin Yanri, 263
 Going, Charles Buxton, Lean history, 18
 government, Lean principles, 318–319
 Graban, Mark
 Healthcare Kaizen: Engaging Front-Line Staff in Sustainable Improvements, 362
 Lean Hospitals: Improving Quality, Patient Safety and Employee Engagement 2e, 362
 graphs, data display, 254–256
 group communications, manager's role, 80
 group projects, kaizen, 191–192
 Group Technology (GT), 220–221
 Gustafson, Terry (*Six Sigma Workbook For Dummies*), 3, 23
 Gygi, Craig
 Six Sigma For Dummies, 3, 23
 Six Sigma Workbook For Dummies, 3, 23

• H •

handoffs, customer management, 284
 hansei, Lean development history, 21
 headers, hoshin table element, 264

- healthcare businesses
 appointment keeping, 327–331
 laboratory queuing, 322–326
 performance improvements, 317
 waste forms, 317–318
Healthcare Kaizen: Engaging Front-Line Staff in Sustainable Improvements (Mark Graban), 362
 Healthcare Performance Partners (HPP), OR
 turnaround case study, 331–333
 heijunka, 173, 231, 370
 heijunka box, 233, 370
 hiring processes, manager's role, 83
 histograms, 256–257
 hoshin, 370
 hoshin kanri (direction setting)
 annual planning table (APT), 264
 annual plans, 265
 annual review, 266–267
 business fundamentals table (BFT), 264
 implementation (Do)
 process, 265
 periodic reviews, 267
 report tables, 263–264
 review table, 264
 seven-step process, 263
 strategy implementation table, 264
 house of quality, Quality Function Deployment (QFD), 202–203
 housekeeping tours, 219, 272
 human resources, 297–298
- 1 •
- icons, value-stream maps (VSMs), 141–142
 ideal state
 single-piece continuous flow, 30–32
 value stream mapping, 29, 171–172, 176
 ideal-state value-stream map, 370
 iGrafx, Flowcharter, 273
 iGraphx, Lean tools, 366
 Imai, Masaaki
 gemba definition, 188
 kaizen definition, 182
 implementation
 infrastructure elements, 91–93
 leading by example, 90–91
 management buy-in, 89–91
 message focus, 90
 people placement, 92
 people policies, 91–92
 preparation steps, 88–93
 support tools, 92–93
 top down standards, 89
 training material
 acquisition, 92
 vision focus, 90
 implementation (Do) process, hoshin kanri (direction setting), 265
 implementation review, 264
 Improvement Encyclopedia, 362
 indirect labor, 40–41
 individual projects, kaizen, 190–191
 industries
 common framework, 305–306
 government, 318–319
 healthcare field, 316–318
 high volume/low customization, 310
 inventory reduction, 308–309
 kanban systems, 309–310
 low volume/high customization, 310–311
 quality at the source, 307
 response driven strategies/challenges, 306
 retail environment, 319–320
 service businesses, 311–315
 transaction businesses, 315
 work cells, 307
Industry Week, 366
 informal principles, 51
 information flow
 current state, 151–152, 167
 defined, 370
 value-stream maps (VSMs), 137–138
 information sharing, 349
 information technology (IT), 138, 299–300
 information updates, 355
 innovation, team
 characteristic, 76
 inspection, source quality, 39–40, 307
 Institute of Industrial Engineering, 367
 instruction sheets, 241
 integrated logistics, 37
 integration phase, organizations, 59–60
 integrity, manager's characteristic, 82
 interfaces, 284, 294
 International Association of Facilitators, 368
 inventory
 backflushing, 234
 current state evaluation, 164–165
 healthcare field waste form, 317
 just in time (JIT), 36–37
 kanban signals, 33, 232–233
 Lean versus traditional mass production, 10
 material handling equipment, 308
 push versus pull systems, 309–310
 reduction methods, 308–309
 service waste form, 313
 stock positioning, 304
 supermarkets, 233
 value-stream maps (VSMs), 138
 waste form, 43, 185
 work-in-process (WIP), 33
 inventory turns, box score metric, 153
 investments, Lean versus traditional mass production, 10
 Ishikawa diagram, 159–160
 Ishikawa, Kaoru, Dr., fishbone diagrams, 251–252

• J •

Japanese Union of Scientists and Engineers (JUSE), 258–259

jidoka
 defined, 370
 5-Whys, 37
 Lean development history, 19
 poka yoke, 37
 quality at the source, 37
 Toyota Production System (TPS), 37
 workstation benefits, 226

job loss, 61

judgement, 83

Juran, Joseph, Lean development, 18

just in time (JIT), 36–37, 370

• K •

kaikaku
 defined, 370
 kaizen form, 186–187
 radical improvements, 34

kaizen
 Act phase, 190
 Check (Study) phase, 189–190
 continuous improvement, 110–111
 continuous incremental change and improvement, 242
 defined, 370
 Do phase, 189
 enterprise level implementation, 282
 group projects, 191–192
 individual projects, 190–191
 involvement levels, 183–184
 kaikaku form, 186–187
 laboratory queuing, 323–325
 management projects, 191
 next future state identification, 29–30
 philosophical elements, 182–183
 Plan phase, 188–189
 Plan-Do-Check-Act (PDCA), 60, 185–186

post-merger team case study, 334–340

project levels, 187–188

striving for perfection, 33–34

waste elimination, 182, 184–185

waste forms, 184–185

work standardization, 186

work team projects, 192

workshop elements, 192–198

kaizen blitz. *See* kaizen event

kaizen blitzkrieg, 98–99

kaizen burst, 173–174

kaizen event
 act phase, 245
 check phase, 245
 do phase, 244
 improvement team organization, 243–244
 organization opportunities, 34
 plan-do-check-act (PDCA) cycle, 243
 planning phase, 244
 project selection, 244
 radical improvements, 34
 study phase, 245
 workshop structure, 244–245

kaizen workshops
 agenda elements, 194–196
 celebrating, 197
 conducting activities, 196–197
 planning elements, 193–194
 project teams, 194
 scope, 193–194
 sustaining gains, 198

kanban
 card systems, 310
 defined, 371
 future state value streams, 173
 heijunka boxes, 233
 inventory pull signal, 33
 pull system connections, 233–234
 pull systems, 232–233
 versus push systems, 309
 two-bin method, 309

Kano modeling, 203–204, 285

Kano, Noriaki, customer requirements model, 123–124

Kaplan, Robert, Dr. Balanced Scorecard developer, 267

key business issues, 263

key processes, 10

kinesthetic, Lean learning style, 74

King Henry III of France, Lean history, 18

KISS principle, Lean simplicity, 39

kitting processes, supplier logistics, 303

know yourself, change response, 71–72

Kolbe A index, assessment tool, 76

• L •

laboratory queuing, healthcare businesses study, 322–326

large group communications, 80–81

lead time
 current state quantifying, 150
 value-stream maps (VSMs), 139, 208

leadership, 76, 82, 97

leading by listening, 101–102

Lean Accounting summit, 364

Lean Blog, 362

Lean Central Europe, 364

Lean Directions, 366

Lean Education Academic Network (LEAN), 365

Lean Educators Conference, 364

Lean Enterprise China, 364

Lean Enterprise Institute, 362, 364

Lean Healthcare Exchange, 363

Lean Hospitals: Improving Quality, Patient Safety and Employment Engagement (Mark Graban), 362

Lean HR summit, 364

Lean in Healthcare, 364

Lean Insider, 362

Lean Library, 362

- Lean Six Sigma
 continuous process
 improvement (CPI), 23–24
 DMAIC approach, 186
 Lean belt certifications, 97
 Lean Summit UK, 364
 learn by doing, rollout
 element, 102–103
 learning card, Balanced
 Scorecard, 268, 269
Learning to See (Mike Rother
 and John Shook), 141
 less than truckload (LTL)
 shipments, 235
 level scheduling, pull
 systems, 33
 Liker, Jeffrey (*Toyota
 Culture*), 362
 Liker, Jeffrey, Lean
 information, 365
 location plot, check sheets,
 253–254
 logical, Lean learning style, 74
 logistics
 delivery routes, 235
 delivery windows, 235
 global considerations,
 235–236
 less than truckload (LTL)
 shipments, 235
 milk run, 234
 supplier links, 303–304
 long-term view, 12, 102
 long-term vision, 84
- **M** •
- macro views, value stream
 maps (VSMs), 176
 maintainability, customer
 requirement
 specification, 125
 maintenance engineering,
 166–167
 management dashboards,
 276–277
 management projects,
 kaizen, 191
 management tours, 219
 managers
 change recognition, 81–82
 communications strategy,
 79–81
 desirable characteristics,
 82–84
 embracing Lean, 355–356
 employee needs assessment,
 84–86
 housekeeping tours, 219
 kaizen involvement levels,
 183–184
 leading by example, 90–91
 top down standards, 89
 value-stream maps
 (VSMs), 138
 vision creation, 78–79
Managing For Dummies (Bob
 Nelson, PhD and Peter
 Economy), 3
Managing Teams For Dummies
 (Marty Brounstein), 3
*The Manufacturer
 Magazine*, 505
 manufacturing engineering,
 165–166
 Manufacturing Extension
 Partnership (MEP), 363
 markers, support tools, 93
 marketing, customer
 strategies, 284–285
 mass manufacturing, 295–296
 mass production, 10–11
 material handling
 equipment, 308
 matrix diagram, JUSE new
 seven tools, 259
 measurement checks, hoshin
 table element, 264
 measurement systems
 Lean behaviors, 40–41
 organizational
 determinations, 104–106
 overcoming
 complacency, 355
 standardized work
 process, 241
 Mental Health Center of Denver
 (MHCD), consumer case
 study, 327–331
 message focus, implementation
 step, 90
 Microsoft Excel, statistical
 analysis software, 274
 middle managers, embracing
 Lean, 356
 milestones, hoshin table
 element, 264
 milk run, 234, 304
 Minitab, data analysis
 software, 274
 monitoring, 241
 monuments, work
 modules, 221–222
 motion (movement), waste
 form, 43
 Motorola, Six Sigma
 development, 23
 movement (motion)
 healthcare field waste
 form, 317
 product waste form, 43, 185
 service waste form, 313
 muda (waste)
 defined, 371
 Lean concepts, 42–44
 non-value-added activities, 119
 multi-directional
 communications, 76
 mura (unevenness)
 defined, 371
 Lean concepts, 42, 44
 non-value-added activities, 119
 muri (overburden)
 defined, 371
 Lean concepts, 42, 44
 non-value-added activities, 119
 Myers-Briggs Type Indicator
 (MBTI), assessment
 tool, 76
- **N** •
- National Institute for
 Standards and
 Technology (NIST), MEP
 services, 363
 natural owner, value stream
 identification, 139–140

- need for speed, software product, 294
 - needs, customer satisfaction element, 124
 - Nelson, Bob PhD (*Managing For Dummies*), 3
 - next future state,
 - kaizen identification method, 29–30
 - non-value-added
 - current state criteria, 149–150
 - defined, 371
 - determinations, 118–119
 - muda, mura, muri activities, 119
 - value-added similarities, 119–121
 - norming, teaming phase, 77
 - Norton, David, Dr., Balanced Scorecard developer, 267
 - not invented here attitude, 69
 - Now, Discover Your Strengths* (Marcus Buckingham/Donald O. Clifton), 76
- 0 ●
- objectives, hoshin table element, 264
 - observation, gemba walks, 270–273
 - Ohno, Taiichi, Lean development, 19
 - one on one communications, manager's role, 80
 - One Page Business Plan, 368
 - online exchanges, demand information flow, 303
 - Online Six Sigma Forum, 368
 - Online Statistics Textbook, 367
 - operating manuals,
 - standardized work process, 241
 - operating rooms, turnaround case study, 331–333
 - operational framework, 11
 - operational stability, Toyota Production System (TPS), 35–36
 - operations, work modules, 222–224
 - optimization, standardized work rules, 238
 - orders, sales process, 286
 - order-to-delivery, 10
 - organizational challenge, 83
 - Organizational Development Network, 368
 - organizational opportunities,
 - locating, 350
 - organizational structure, Lean versus traditional mass production, 11
 - organizations
 - acceptance phase, 56–57
 - accounting functions, 111
 - adaptability, 62–63
 - behavior standards, 62
 - change phases, 56–60
 - charging forward phase, 58–59
 - core group requirements, 112
 - cowboy individualism, 60
 - cultural assessment elements, 50–55
 - current state identification, 52–53
 - direction phase, 57–58
 - fear of the unknown, 61
 - finance functions, 111
 - formal assessment process, 53–55
 - formal principles, 50
 - informal principles, 51
 - integration phase, 59–60
 - inwardly Lean, 106–108
 - job loss, 61
 - measurement system determinations, 104–106
 - mergers and acquisitions, 109
 - outwardly Lean, 108
 - organizations
 - planning phase, 57–58
 - practically Lean, 109–110
 - principle assessment, 53
 - purpose types, 49
 - recognition phase, 56–57
 - resistance to change, 61
 - right-sizing, 61
 - roadblocks to success, 60–62
 - rule breaking, 60
 - sensei's role, 94–96
 - spider chart, 54
 - starting point
 - determinations, 51–53
 - state of decline, 62
 - student's role, 96–98
 - turmoil phase, 59
 - overall lead time, current state 150
 - overprocessing, waste form, 43
 - overproduction
 - healthcare field waste form, 317
 - product waste form, 42, 184
 - service waste form, 313
- p ●
- pacemaker operation, value streams, 172
 - Pareto charts
 - significant few influences, 252–253
 - variation reduction tool, 44
 - Pareto, Vilfredo, Pareto Principle, 252
 - partnership building,
 - manager's role, 83
 - parts per shift, box score metric, 153
 - people
 - align principles, 72
 - always come first, 348
 - autonomation, 38
 - change implementation, 73–74
 - change responses, 66–67
 - collaboration, 77–78
 - desirable team
 - characteristics, 75–76
 - individual's role, 72–73
 - know yourself, 71–72
 - learning styles, 74–75
 - manager roles, 78–86
 - multifunctional workers, 78
 - perceptions are reality, 67–68
 - resistance to change reality, 68–69
 - Respect for People aspect, 35, 37–38

- stress response, 70
- systems approach to
 - customer satisfaction, 289
- team formation phases, 76–77
- Toyota Production System (TPS) motivation, 35
- transaction process, 283
- unreasonable reactions, 70
- visual management, 36
- people level, Lean
 - implementation processes, 14–15
- people placement, implementation step, 92
- people policies, Lean
 - implementation step, 91–92
- people's optimization, standardized work rules, 238
- perception
 - change element, 67–68
 - customer requirement specification, 125
- performance measures
 - hoshin kanri (direction setting), 263
 - hoshin table element, 264
- performance, customer requirement, 126
- performance reviews, gemba walks, 272
- performing, teaming phase, 77
- periodic reviews, hoshin kanri (direction setting), 267
- perspective, value-stream map (VSM) purpose, 137
- physiological response, change reaction, 70
- pieces per labor hour, box score metric, 153
- pitch, future state value streams, 173
- Plan for Every Part (PFEP), pull system, 233
- Plan phase, kaizen projects, 188–189
- Plan-Do-Check-Act (PDCA) defined, 371
 - kaizen, 60, 185–186, 243
- Plan-Do-Study-Act (PDSA), 371
- planned maintenance, flow blockage prevention, 229
- planning phase
 - kaizen workshop, 244
 - organizations, 57–58
- planning skills, Lean students, 97
- point of use storage (POUS)
 - in-process materials, 308
 - work modules, 224
- poka-yoke (error-proof) defined, 371
 - flow blockage prevention, 227–228, 229
 - mistake-prevention technique, 37
 - work instructions, 241
- policies, Lean implementation step, 91–92
- post instructions, standardized work process, 240–241
- practitioners, 366–367
- predictive maintenance, 229
- pricing model, customer requirement specification, 126
- pricing, sales process, 286
- principles, organization element, 50–51
- prioritization matrix, JUSE new seven tools, 259
- problem solving
 - check sheets, 253–254
 - control charts, 257–258
 - fishbone diagrams, 251–252
 - 5 Whys, 250–251
 - graphs, 254–256
 - histograms, 256–257
 - manager's role, 83
 - Pareto charts, 252–253
 - scatter plots, 254–255
- problem-to-repair, 10
- process card, Balanced Scorecard, 268–269
- Process Decision Program chart (PDPC), JUSE new seven tools, 259
- process designers, value-stream maps (VSMs), 138
- process distribution, check sheets, 253–254
- Process Failure Mode and Effects Analysis (PFMEA), kaizen projects, 188
- process focus, manager's characteristic, 82
- Process Intelligence (PI), Business Process Management (BPM), 24–25
- process owners, value-stream maps (VSMs), 137
- process times, current state value stream mapping, 148–149
- process workers, value-stream maps (VSMs), 138
- processes
 - benchmarking, 205–207
 - box score statistics, 152–153
 - mass manufacturing principles, 295–296
 - standardized work characterizations, 238
 - supplier management, 300–304
 - systems approach to customer satisfaction, 289
 - team characteristic, 76
 - value-added determinations, 117–118
 - value-stream maps (VSMs), 135–139
- process-flow diagrams, versus value stream maps (VSMs), 176
- procurement managers, value-stream maps (VSMs), 138
- product family, value-stream maps (VSMs), 139
- production engineering, current state evaluation, 165–166
- production processes, mass manufacturing principles, 295–296
- Productivity Inc., Lean workshops, 364

Productivity Press, Lean learning tools, 361–362

products

- benchmarking, 205–207
- Group Technology (GT) analysis, 220–221
- Lean versus traditional mass production, 10
- milk run, 234
- quality at the source, 39–40
- service similarities, 313
- software development techniques, 293–294
- tolerancing, 293
- value-added criteria, 28

program-of-the-month syndrome, 103–104

progress celebration, team characteristic, 76

progress highlighting, rollout element, 102

progressive inspection, 227

Project Management Institute, 367

Project Manager's Homepage, 367

project teams, kaizen workshops, 194

projects, kaizen event selection, 244

pull system

- backflushing, 234
- foundation element, 32–33
- heijunka concepts, 231
- just in time (JIT) element, 37
- kanban, 232–233
- kanban connections, 233–234
- lot versus level production, 231–232
- Plan for Every Part (PFEP), 233
- supermarkets, 233

punitive measures, overcoming complacency, 355

purchase, customer requirement specification, 126

purpose, team characteristic, 75

push systems, versus kanban, 309

Q

quality at the source

- flow blockage prevention, 226
- flow obstacle removal, 307
- mass manufacturing principles, 296
- product inspection, 39–40

Quality Function Deployment (QFD)

- customer focused tool, 202–203
- marketing/design transitions, 285

quality leadership, team characteristic, 76

quality practitioners, current state evaluation, 163–164

quick change, flow blockage prevention, 230–231

quick changeover, just in time (JIT), 36

quotes, sales process, 286

R

radar charts. *See* spider charts

recognition phase, organizations, 56–57

reflection, manager's characteristic, 82

rejects, waste form, 43

Relations diagram, JUSE new seven tools, 259

relationship building, gembu walks, 272

reliability, customer requirement specification, 126

repetitive work, standardized work rules, 238–239

report tables, hoshin kanri (direction setting), 263–264

resistance to change, attitudes, 61, 68–69

Respect for People defined, 11, 53, 371

Toyota Production System (TPS), 35, 37–38

results achievement, Lean concept, 12

results focus, manager's characteristic, 82

retail environment, Lean principles, 319–320

review table, hoshin kanri (direction setting), 264

revisions, standardized work rules, 239

reward systems, HR function, 298

rollout

- approach identification, 102
- awareness creation, 101–103
- enterprise value streams, 98
- implementation tools, 99
- learn by doing, 102–103
- long-term view reinforcement, 102
- measurement determinations, 104–106
- organizational pulse checking, 99–100
- program-of-the-month syndrome, 103–104
- progress highlighting, 102
- starting point identification, 100–101

rose by any name attitude, 69

Ross, Craig (*Stomp the Elephant in the Office*), 362

Rother, Mike

- Learning to See*, 141
- Toyota Kata*, 362

rule breaking, overcoming roadblocks to success, 60

Rumsey, Deborah, PhD (*Statistics For Dummies*), 3

run charts, data display, 258

S

s areas, starting point element, 100

safety

- customer requirement specification, 126
- 5S process, 218

- housekeeping tours, 219
- management tours, 219
- sales processes, customer
 - selection/configuration, 285–286
- scalability, customer
 - requirement specification, 126
- scatter plots, relationship
 - display, 254–255
- scope
 - kaizen workshop planning, 193–194
 - value stream maps (VSMs), 179
- scrap, box score metric, 153
- scrub, 5S process, 218, 314
- security, customer requirement
 - specification, 126
- selection errors, customer
 - management
 - challenge, 284
- senior managers, embracing
 - Lean, 355–356
- sensei
 - benefits, 94
 - current state evaluation, 162–163
 - defined, 371
 - desirable traits, 95–96
 - expectations, 95–96
 - kaizen event leader, 244
 - locating, 95
 - mentoring process, 96
- servant leadership, 82
- service
 - customer management
 - process, 286–287
 - benchmarking, 205–207
 - service businesses
 - commercial versus
 - internal, 312
 - complexity checking, 315
 - 5S processes, 314
 - frontline employees, 315
 - performance improvements, 311
 - product similarities, 313
 - quality improvements, 314–315
 - speed improvements, 314–315
 - variety checking, 315
 - waste forms, 313
 - seven forms of waste, 371
 - shared methods, 302
 - shared models, 302
 - shared technologies, 303
 - Shewart, Walter, Dr.
 - control chart developer, 257
 - PDCA cycle development, 185
 - Shingo Prize
 - College of Business of Utah
 - State University, 363
 - Lean certification, 97
 - Lean practices, 12
 - Shingo, Shigeo
 - eighth form of waste
 - definition, 185
 - Lean development history, 18
 - shipments, less than truckload (LTL), 235
 - Shook, John (*Learning to See*), 141
 - simplicity, best practice, 348–349
 - simultaneous execution. *See* concurrent engineering
 - single minute exchange of die (SMED)
 - defined, 371
 - flow blockage prevention, 230–231
 - single-piece continuous
 - flow, 30–32
 - SIPOC diagram, process
 - identification tool, 122
 - situations, hoshin table
 - element, 264
 - Six Sigma, 23, 353–354
 - Six Sigma For Dummies* (Craig Gygi, Neil DeCarlo, and Bruce Williams), 3, 23
 - Six Sigma Workbook For Dummies* (Craig Gygi/ Bruce Williams/Terry Gustafson), 3
 - small group communications,
 - manager's role, 80
 - Society of Manufacturing Engineers (SME)
 - Lean certification, 97, 363
 - Lean conferences, 364
 - software
 - enterprise level tools, 213–214
 - hoshin tables, 264
 - product development
 - techniques, 293–294
 - value stream maps (VSMs), 141–142, 176–177
 - Software AG
 - ARIS, 141, 273
 - Lean tools, 366
 - sort, 5S process, 217, 314
 - source inspection, flow
 - blockage prevention, 227
 - spaghetti diagrams
 - current state evaluation, 162
 - value stream analysis, 210–211
 - spider chart, information
 - management tool, 54, 274–275
 - stacked bar charts, data
 - display, 255
 - stakeholder relationships, 12
 - standard adjustments,
 - standardized work
 - process, 241
 - standard operations. *See* standardized work
 - standard work. *See* standardized work
 - standardization, customer
 - satisfaction element, 291–292
 - standardize, 5S process, 218, 314
 - standardized work
 - defined, 372
 - foundation for
 - improvement, 238
 - future state value streams, 173
 - implementation processes, 239–242
 - just in time (JIT)
 - environment, 36
 - predictable methods, 237–238
 - rules, 238–239
 - standards
 - effective practices, 350
 - manager's role, 84
 - software product
 - development, 294
 - state of decline, overcoming, 62

- Statistics For Dummies* (Deborah Rumsey, PhD), 3
- stock positioning, inventory element, 304
- Stomp the Elephant in the Office* (Steven Vannoy/Craig Ross), 362
- stopwatches, support tools, 93
- storming, teaming phase, 77
- straighten, 5S process, 217, 314
- strategic global agreements, 304
- strategy management
 - Balanced Scorecard, 267–271
 - business process software, 277
 - gemba walks, 271–273
 - hoshin kanri (direction setting), 262–267
 - information management tools, 273–277
- strategy skills, Lean students, 97
- stratification, data display, 258
- stress response, change reaction, 70
- students
 - knowledge seeking, 96
 - Lean certification, 97–98
 - ongoing curriculum, 97
 - skill areas, 97
- Study (Check) phase
 - kaizen projects, 189–190
 - kaizen workshop, 245
- success, step by step process, 349
- Superfactory, 366
- supermarkets, 172, 233, 308
- suppliers
 - architecture elements, 301–302
 - contractual ties, 302
 - demand information, 303
 - development information, 303
 - distribution centers, 304
 - flow, 303
 - Inputs, Process, Outputs and Customers (SIPOC), 372
 - Lean versus traditional mass production, 10
 - logistics, 303–304
 - management processes, 300–304
 - milk run, 234, 304
 - shared methods, 302
 - shared models, 302
 - shared technologies, 303
 - stock positioning, 304
 - strategic global agreements, 304
 - third-party kitting, 303
 - top-up systems, 303
- supply, current state evaluation, 164–165
- supply-chain managers, value-stream maps (VSMs), 138
- support functions, 296–297
- support strategies, hoshin kanri (direction setting), 263
- support tools, implementation step, 92–93
- Syque.com, Improvement Encyclopedia, 362
- system kaizen. *See* kaikaku
- systematize, 5S process, 218, 314
- Systems 2 Win, Lean tools, 366
- systems, standardized work rules, 239
- 7 •
- tables, hoshin kanri (direction setting), 263–264
- tactics, hoshin table element, 264
- takt time
 - box score metric, 154
 - defined, 372
 - just in time (JIT) environment, 36
 - value-stream maps (VSMs), 33, 139, 208
- talent acquisition, HR role, 298
- talent retention, HR role, 298
- tallying, check sheets, 253–254
- Target*, 366
- Taylor, Frederic Winslow, Lean history, 18
- teams
 - adjourning phase, 77
 - assessment tools, 76
 - collaboration environment, 77–78
 - desirable characteristics, 75–76
 - external facilitators, 77
 - formation phases, 76–77
 - forming phase, 77
 - kaizen event, 243–244
 - kaizen workshops, 194
 - multifunctional workers, 78
 - norming phase, 77
 - performing phase, 77
 - post-merger case study, 334–340
 - storming phase, 77
 - value stream assembly, 140
 - work flow obstacle removal, 307–308
- teardown rooms, automotive industry, 207
- technical skills, Lean students, 97
- technology, systems approach to customer satisfaction, 289
- templates, 141, 249
- third-party kitting, supplier logistics, 303
- 3 Actuals. *See* 3 Gen
- 3 Gen (genchi, genbutsu, genjitsu)
 - Balanced Scorecard, 270–271
 - defined, 369
- 3P (Production Preparation Process)
 - defined, 369
 - waste prevention, 211–213
- time check, standardized work process, 240
- time, transaction process, 283
- timelines, hoshin table element, 264
- time-series representation, value-stream map (VSM) purpose, 137
- tolerancing, physical products, 293
- tool boards, visual management aspect, 36
- toolbox, support tools, 93
- top down standards, 89

- top-up systems, supplier logistics, 303
- Total Productive Maintenance (TPM), flow blockage prevention, 228–230
- Toyota Automatic Loom Works, 19
- Toyota, Eiji, Lean development, 19, 21
- Toyota, Kiichiro, Lean history, 19, 21
- Toyota, Sakichi, Lean history, 19
- Toyota, 19, 21, 55
- Toyota Culture* (Jeffrey Liker), 362
- Toyota Kata* (Mike Rother), 362
- Toyota Production System (TPS) andon, 36
- jidoka, 37
- just in time (JIT), 36–37
- Lean development history, 19, 21–22
- Lean incubator, 1, 9–11
- operational stability, 35–36
- people motivator, 35
- Respect for People aspect, 35, 37–38
- visual management, 36
- trainers, locating, 364–365
- training materials, implementation step, 92
- training systems, HR function, 298
- Training within Industry (TWI) Service, Lean development history, 18
- training, gemba walks, 272
- transaction businesses, 315
- transaction processes, 282–283
- transport (conveyance), waste form, 42
- transportation healthcare field waste form, 317
- service waste form, 313
- waste form, 184
- tree diagram, JUSE new seven tools, 259
- True North, Toyota's guiding direction, 55
- turmoil phase, organizations, 59
- two-bin method, kanban systems, 309
- Type-1 muda, 119–120, 43
- Type-2 muda, 44, 119, 161–162
- U •
- U shape, work module, 224–225
- underutilization of people, 185
- unevenness (mura), 42, 44, 119
- University of Dayton, Center for Competitive Change, 365
- University of Michigan, 365
- updates overcoming complacency, 355
- software product development, 294
- standardized work process, 241
- standardized work rules, 239
- uptime, box score metric, 153
- Usenomics, 367
- Utah State University, Shingo Prize, 363
- V •
- value defined, 372
- defined as an item's worth, 116
- determined by customers, 116
- non-value-added determinations, 118–119
- relative factors, 116
- value-added determinations, 117–118
- value added current state criteria, 149–150
- customer criteria, 28
- defined, 372
- value added flow, 12
- value added processes determinations, 117–118
- non-value-added similarities, 119–121
- value stream bottleneck process, 172
- box scores, 208
- case study, 143–146
- chart validation, 154–155
- critical path, 149
- current state mapping, 29
- current-state value-stream map, 146–152
- customer flow path, 350–351
- defined, 372
- 5-Whys, 209–210
- foundation element, 28–30
- future state value-stream map, 172–177, 180
- heijunka, 173
- ideal state, 29, 171–172
- kanban, 173
- Lean concepts, 12–13
- lead time, 208–209
- mapping tools, 140–142
- natural owner identification, 139–140
- next future state identification, 29–30
- pacemaker operation, 172
- pitch, 173
- process flow, 134–135
- quality at the source, 39–40
- rollout element, 98
- spaghetti diagrams, 210–211
- standardized work, 173
- supermarkets, 172
- support information gathering, 142–143
- takt time, 33, 154, 208
- team gathering, 140
- work cells, 172
- value stream manager, enterprise level, 283
- value stream maps (VSMs) box score, 139
- current state evaluation, 159–170
- defined, 372
- detail levels, 176
- foundational tool, 177–178
- icon listing, 141–142
- information flow, 138
- information technology (IT), 138

- inventory, 138
 - Ishikawa diagram, 159–160
 - lead time, 139
 - macro views, 176
 - process designers, 138
 - process owners, 137
 - process steps, 135–136, 138
 - process workers, 138
 - procurement managers, 138
 - product family, 139
 - versus process-flow diagrams, 176
 - purposes, 137
 - scope, 179
 - software packages, 176–177
 - starting points, 176
 - supply-chain managers, 138
 - takt time, 139
 - value stream managers, 138
 - value stream tool, 29
 - Vannoy, Steven (*Stomp the Elephant in the Office*), 362
 - variation reduction, 12
 - variation, mura (unevenness), 44
 - verbal, Lean learning style, 74
 - video cameras, 93
 - vision, 263
 - vision creation, manager's role, 78–79
 - vision focus, implementation step, 90
 - visual feedback, software product development, 294
 - visual improvement, starting point, 100–101
 - visual, Lean learning style, 74
 - visual management
 - A3 reports, 248–249
 - andons, 245–246
 - cross-training charts, 246–248
 - display boards, 246–247
 - Toyota Production System (TPS), 36
 - transparency, 38
 - voice of the customer (VOC), 202–203, 372
- W •
- waiting (delay)
 - healthcare field waste form, 317
 - product waste form, 42, 184
 - service waste form, 313
 - wants, customer satisfaction, 124
 - waste (muda)
 - defined, 372
 - healthcare field forms, 317–318
 - Lean concepts, 42–44
 - non-value-added activities, 119
 - service business forms, 313
 - waste elimination
 - kaizen goal, 182, 184–185
 - Lean concept, 12
 - muda, mura, muri, 42–44, 119
 - 3P (Production Preparation Process), 211–213
 - transparency, 38
 - waste forms, 42–44, 184–185
 - websites
 - American Society of Quality, 367
 - American Society of Training & Development, 368
 - ASQ, 364
 - Assembly Magazine, 366
 - Association for Manufacturing Excellence (AME), 363
 - Association for Operations Management, 367
 - Business Process Management Initiative, 368
 - Business Process Trends, 368
 - Center for Competitive Change, 365
 - Council of Supply Chain Management Professionals, 367
 - Evolving Excellence, 363
 - eVSM, 366
 - Free Management Library, 368
 - Gemba Panta Rei, 363
 - iGrafx, 273
 - Improvement Encyclopedia, 362
 - Industry Week, 366
 - Institute of Industrial Engineering, 367
 - International Association of Facilitators, 368
 - JUSE new seven tools, 259
 - Lean Accounting summit, 364
 - Lean Blog, 362
 - Lean Central Europe, 364
 - Lean Directions, 366
 - Lean Education Academic Network (LEAN), 365
 - Lean Educators Conference, 364
 - Lean Enterprise China, 364
 - Lean Enterprise Institute, 362
 - Lean Healthcare Exchange, 363
 - Lean HR summit, 364
 - Lean in Healthcare, 364
 - Lean Insider, 362
 - Lean Library, 362
 - Lean Summit UK, 364
 - The Manufacturer Magazine, 366
 - Manufacturing Extension Partnership (MEP), 363
 - Mental Health Center of Denver (MHCD), 327
 - Microsoft Excel, 274
 - Minitab, 274
 - National Institute for Standards and Technology (NIST), 363
 - One Page Business Plan, 368
 - Online Six Sigma Forum, 368
 - Online Statistics Textbook, 367
 - Organizational Development Network, 368
 - Productivity Inc., 364
 - Productivity Press, 361

- Project Management
Institute, 367
- Project Manager's
Homepage, 367
- Shingo Prize, 363
- Society of Manufacturing
Engineers (SME), 363, 364
- Software AG, 273
- Superfactory, 366
- Systems 2 Win, 366
- Target, 366
- University of Michigan, 365
- Usenomics, 367
- wikipedia, 362
- Whitney, Eli, Lean history, 18
- wide-open spaces, starting
point, 101
- wikipedia, 362
- Williams, Bruce
Six Sigma For Dummies, 3, 23
*Six Sigma Workbook For
Dummies*, 3, 23
- work cells, 172, 307
- work modules, continuous
value-added flow, 221–226
- work sampling, check
sheets, 254
- work team projects, kaizen, 192
- work-in-process (WIP), 33, 240
- workplace, manager's role, 84
- worksheets, standardized
work rules, 239
- workshops, kaizen event
structure, 244–245
- World Health Organization, 238
- written material, 141

<http://www.pbookshop.com>