

INDEX

A

- Accenture Learning, 177
- Accountability, 156–157
- Accreditation Board for Engineering and Technology (ABET), 24
- Accuracy: needed in training content, 101–102, 231; technical skills for, 194–195
- AchieveGlobal, 83
- ADDIE model: analysis phase of, 68*t*, 70–74, 93*t*; coordination across all phases of the, 224*t*; design phase of, 69*t*, 74–78, 93*t*; development phase of, 69*t*, 78–80, 93*t*; evaluation phase of, 69*t*, 84–86, 94*t*; implementation phase of, 69*t*, 80–83, 93*t*; overarching differentiators and, 69*t*, 86–88, 94*t*; potential of differentiators during phases of, 91–92; similarities to other systematic life cycle methodologies, 70; technical training differentiators and, 68*t*–69*t*, 70–86; Vanget's instructional systems design model based on, 203–204
- Adelman, M., 250
- Advisory teams: description of, 106; team charter on content development by, 106–109
- Aggarwal, R., 273
- Ajay, A., 114*fig*, 115, 116*fig*, 117
- Alleman, J., 190
- American Society for Mechanical Engineers (ASME), 20–22
- Analysis phase (ADDIE model): differentiators listed, 68*t*, 93*t*; e-learning differentiator, 68*t*, 73–74, 93*t*; focus differentiator, 68*t*, 71, 93*t*; formal and informal learning differentiator, 68*t*, 72, 93*t*; planning horizon differentiator, 68*t*, 72, 93*t*; trigger differentiator, 68*t*, 71, 93*t*
- Anderson, C., 47, 153
- “Areas of expertise,” 193
- ASTD: *The ASTD Technical and Skills Training Handbook* (Kelly) by, 43, 45; Benchmarking Forum (BMF) of, 28, 44, 45; BEST Award of, 97; certification requirements of, 233; estimates on annual training costs by, 43–44; on mandatory and compliance-driven technical training, 277; size of training functions reported on by, 197; State of the Industry survey (2008) of, 47, 97, 170; study on perceptions of strategic value of training, 245–246; *Technical Skills Training Magazine* by, 45; technical training as defined by, 12; technical training delivery survey by, 270; training content classifications by, 44; training data available through, 255; training-related competencies list by, 193
- ASTD Competency Model, 46
- Audience size differentiator, 69*t*, 75
- Aufreiter, N., 233
- Availability of content, 69*t*, 74–75, 93*t*
- Avanade, 105

B

- Babou, S., 115
- Balasundaram, I., 273

- Baldwin-Evans, K., 270
 Bates, R., 283
 Beaman, K., 124
 Beck, T., 4, 73, 83
 Bell, B., 273
 Benchmarking Forum (BMF) [ASTD], 28, 44, 45
 Benkowski, J., 4, 12, 43, 51, 73, 84, 85, 127, 156, 191, 223
 Berge, Z., 288
 BEST Award (ASTD), 97
 Bezanson, W., 147
 Biebel, M., 266
 Bingham, T., 174, 175, 181, 245, 246, 260, 274
 Binghampton University, 5
 Blankinship, D., 149
 Blending training, 271–272
 Blondin, R., 68
 Blount, M., 169–170
 Bogue, R., 33
 Bonk, C., 269
 Bookter, A., 283
 Bordonaro, E., 154
 Bowman, J., 214, 221, 287
 Bradt, G., 131
 Branding technical training: benefits of, 248–249; co-branding approach to, 251; in the medical field, 250–252; stakeholder expectations of, 249–250
 “Branding Technical Training in the Medical Field” (Nickerson and Adelman), 250–252
 brandXpress blog, 249
 Brethower, D., 211
 Brinkman, R., 120
 British Columbia Institute of Technology (BCIT), 179
 Broad, M., 279
 Brown, J., 215
 Buckley, E., 268
 Budget management: aligning funding to evaluation outcomes, 175–176; applying creativity to funding, 176–177; issues to consider for, 181–183; potential cost savings through, 183*t*–184; reducing vendor costs, 183*t*, 184; understanding return on investment (ROI), 172–175
 Budgeting: complexities of training costs to consider when, 159–162; cost of technical training considered for, 162–163; importance of art and discipline of, 185; opportunity cost, 163; pointers on technical training, 171–172; technical versus non-technical training costs, 166–170
 “Build versus buy” decision, 223–224
Building Effective Technical Training: How to Develop Hard Skills Within Organizations (Rothwell & Benkowski), 43
 Bureau of Labor Statistics, 12, 50
 Burke, L., 280, 281
 Burkett, H., 173
 Business Intelligence Industry Report (2009), 197
 Business models: definition of, 135; description of, 132; example of technical training, 132–133*fig*; scalability of, 134–135
 Business objectives: identifying to justify funding technical training, 152–154; integration of training with, 126; training strategies alignment with, 125–127
 Business training: benefits of, 22–23; definition of, 22; overcoming resistance to, 24–25; as technical training category, 26*fig*; underestimating the value of, 23–24
 Business-technical training alignment, 36
 C
 Campbell, R., 49
 Capability Maturity Model (CMM), 25
 Capability Maturity Model Integration (CMMI), 52
 Capability training aspects: availability of career paths for technical employees, 58–61; developing organizational training capabilities, 222; integrating technical training into talent management, 55–58*t*; learning management systems (LMSs) as, 147, 222, 227; skills mastery over course of career, 61–62; technical training skills, 192–196; tension between two core competencies, 54–55*fig*
 Caprara, J., 52
 Career paths: availability for technical employees, 58–61; need for development training to facilitate, 212, 215–216, 217*t*; pyramids of managerial versus technical, 60*fig*; skills mastery over course of, 61–62
 Carlotti, S., 233
 Cartwright, R., 125
 Cary, B., 152
 Case studies. *See* Technical training case studies
 Causality differentiator, 69*t*, 84, 94*t*
 Center for Graduate Studies (Drexel University), 289
 Centralized technical training, 190–191
 Cerner, 49
 Certification: ASTD requirements for, 233; as differentiator factor, 69*t*, 79–80, 93*t*; as emotional driver, 258; marketing technical training role of, 241–242; vendor-supplied external, 275
 Chartered Institute of Personnel and Development, 125
 Chen, X., 114*fig*, 115, 116*fig*, 117
 Chesbrough, H., 135
 Chief information officer (CIO), 235
 Chief learning officer (CLO), 198–199
 Cisco Systems, 8, 17–18, 28, 46, 191, 242
 City University (London), 179
 Clancy, T., 87, 101
 Clark, R., 26, 43, 51, 82
 Classroom training, 270–271
 Closed-loop communication, 221
 Co-branding, 251
 Coates, D., 81
 Colfer, S., 218
 Collaboration training structure: advisory teams developing content, 106–107; sample team charter for curriculum maintenance, 107–109; sponsors championing training and, 105–106; steering committees alignment/governance of training, 111–112; training organizations to collaborate, 109–110. *See also* Teams
 Collaborative/groupware technology, 147, 274–275
 Collins, J., 260
 Combs, W., 43, 285, 288
 Common language concept, 33–34
 Communication: groupware/collaborative technology used for, 147, 274–275; marketing technical training, 241; stakeholders and closed-loop, 221

- Community of Practice (CoP), 274–275
- Competencies: building marketing, 232–234; core, 54–55*fig*; development as training need, 212, 215, 217*t*; to execute technical training strategies, 142–147; Masie’s survey on technical training-related, 235–236; organizational training, 54–62, 192–196, 222, 227; process-related, 143–145; skill-related, 142–143; technology-related, 146–148*t*
- Compliance-driven technical training, 276–278
- Computer-based training (CBT): description of, 31; distinguishing TBT, LMS, and, 32
- Concept content, description of, 27*t*
- Conger, J., 128
- ConocoPhillips, 77
- Consequence of errors, 69*t*, 85, 94*t*
- Content authoring/management systems, 147
- Content. *See* Technical training content
- Contextualization differentiator, 69*t*, 75–76, 93*t*
- Continuous improvement initiatives, 52–53
- Control Objectives for Information and Related Technology (COBIT), 52
- Coopetition differentiator, 69*t*, 76, 93*t*
- Core competencies: technical training for convergence of, 54; tension between two, 54–55*fig*
- Corporate Issues Survey (2009), 47
- Corporate Leadership Council, 61, 100, 112, 197
- Corporate Leadership Council survey (2004), 49
- Cost issues: ASTD estimates on annual training costs, 43–44; dispelling misconceptions about the, 236–237; employee retention due to training as, 165–166; marketing course in order to increase ROI, 231; opportunity costs, 163; overarching differentiator of technical training, 69*t*, 86–87, 94*t*; reducing vendor, 183–184; technical versus non-technical training, 166–170; training budget, 159–177. *See also* Funding issues
- Courses. *See* Technical training courses
- Court, D., 233
- Courville, R., 248
- Credibility: business skills for, 193–194; as technical training challenge, 49–51
- Cross, J., 269
- Cross, R., 113
- Curriculum managers: curriculum development considerations for, 226*t*; description and functions of, 198, 200; design role across ADDIE phases, 224*t*. *See also* Technical training content
- Customer training: description of, 30; technical training component of, 30–31
- D**
- Darzi, A., 273
- Davenport, R., 52, 233
- Decentralized technical training, 190–191
- Decision making: “build versus buy,” 223–224; human resource development (HRD) role in training, 52; marketing technical training, 242–243; prioritizing technical training, 219–221
- Dees, I., 102
- Delivery. *See* Technical training delivery
- Deloitte, 174
- DeMarco, M., 57, 161
- Design phase (ADDIE model): availability of content differentiator, 69*t*, 74–75, 93*t*; contextualization differentiator, 69*t*, 75–76, 93*t*; coopetition differentiator, 69*t*, 76, 93*t*; differentiators listed, 69*t*, 93*t*; granularity of content and audience size differentiator, 69*t*, 75, 93*t*; subject-matter (SME) involvement differentiator, 69*t*, 77–78, 93*t*. *See also* Technical training design
- Developing Technical Training* (Clark), 43
- Developing Training Courses: A Technical Writer’s Guide to Instructional Design and Development* (Hassell-Corbiell), 43
- Development phases (ADDIE model): differentiators listed, 69*t*, 93*t*; evolutionary versus revolutionary differentiator, 69*t*, 78–79, 93*t*; refresh cycles differentiator, 69*t*, 79, 93*t*, 230; standardization and certification differentiator, 69*t*, 79–80, 93*t*
- Differentiators: ADDIE analysis phase, 68*t*, 70–74, 93*t*; ADDIE design phase, 69*t*, 74–78, 93*t*; ADDIE development phase, 69*t*, 78–80, 93*t*; ADDIE evaluation phase, 69*t*, 84–86, 94*t*; ADDIE implementation phase, 69*t*, 80–83, 93*t*; overarching, 69*t*, 86–88, 94*t*; potential of, 91–92
- Doctor, D., 77
- Drexel University, 285, 289–293
- Dunk, T., 155, 239, 245
- E**
- E-learning: as differentiator, 68*t*, 73–74, 93*t*; technical training delivery through, 271
- ECCLIPSE for Emerging Leaders, 22
- Economic decline factor, 46–48
- Effect Performance, Inc., 155
- Electronic Arts, Inc. (EA), 88–91, 271
- Embry-Riddle Aeronautical University, 179
- Emotional drivers: promoting technical training using, 257–259; WIIFM (“What’s in it for me?”) question on, 104–105, 240, 256
- Employee retention, 165–166
- Employees: career paths of, 58–62; developing marketing skills of existing, 233; increasing expertise of, 69*t*, 87; influencing training self-efficacy of, 282; marketing technical training to, 232–263; “parking,” 87; providing options for training, 103; recruiting and hiring, 56; succession planning process for, 57; talent management of, 55–58*t*; training programs and retention of, 165. *See also* Organizations; Stakeholders; Technical training
- ENAC, 179
- Environmental Protection Agency, 277, 287
- Environmental training factors: evolution of technical training, 40–42; impact of declining economy, 46–48; lack of common understanding, 39–40; perception vs. reality of technical training, 42–45; strong technical training lobby, 45–46
- Escalations differentiator, 69*t*, 85–86, 94*t*
- Eugenio, V., 112
- Evaluation: ADDIE model phase of, 69*t*, 78–86, 94*t*; aligning funding to outcomes of, 175–176; formative, 285, 287; Kirkpatrick four-level evaluation model of, 173, 286; Phillip’s ROI methodology of, 173; recommended steps in promoting training through, 287–288; stakeholder role in, 99*t*; summative, 285–286; technical training delivery, 278–288; technical training programs, 284–288

- Evaluation phase (ADDIE model): causality differentiator, 69*t*, 84; consequence of errors differentiator, 69*t*, 85; differentiators listed, 69*t*, 94*t*; escalations differentiator, 69*t*, 85–86; measurability differentiator, 69*t*, 84–85
- Evolutionary technical training, 69*t*, 78–79, 93*t*
- Exchange and Office Communications Server (OCS), 263
- Executing Your Strategy: How to Break It Down and Get It Done* (Morgan), 123
- Executives. *See* Management
- “Expertise areas,” 193
- Expertise issues, 69*t*, 87, 94*t*
- Expertus, Inc., 229
- F**
- Factual information content, 27*t*
- “Faith-based training,” 84
- Falletta, S., 285–286, 288
- Farbrother, B., 24
- Federal Drug Administration, 277
- Fleet Maintenance* (magazine), 165
- Focus differentiator, 68*t*, 71, 93*t*
- Fogg, C., 127
- Foley, J., 132
- Formal learning differentiator, 68*t*, 72, 93*t*
- Formative training evaluation, 285, 287
- French Civil Aviation University, 179
- Funding: aligning to evaluation outcomes, 175–176; applying creativity to, 176–177; impact on declining economy on available, 46–48; Lufthansa Technical Training (LTT) GmBH case study on, 178–180, 274; stakeholder role in, 98*t*; technical training and available, 37
- Funding issues: defining accountability and ownership as, 156–157; identifying business reasons for technical training as, 152–154; leveraging policies and processes as, 157–159; setting and managing the budget, 159–177; understanding executive expectations for training as, 154–156. *See also* Cost issues
- G**
- Galagan, P., 181
- Gartner, 255
- Geffen, A., 20
- Gesche Larsen, N., 153, 176
- Gilmore, A., 24, 192
- Goodman, M., 192
- Governance structures: advisory teams developing content, 106–107; sample team charter for curriculum maintenance, 107–109; sponsors championing training, 105–106; steering committees alignment/governance of training, 111–112; training organizations to collaborate, 109–110
- Graham, C., 269
- Granularity of content, 69*t*, 75, 93*t*
- Gregory, R., 157
- Groundswell effect, 242
- Groupware/collaborative technology, 147, 274–275
- Guiding principles, 131–132
- Gupta, K., 211
- H**
- Hale, J., 137
- Hands-on training, 272–273
- Harper, E., 53
- Harward, D., 42, 84
- Hassell-Corbiell, R., 43
- Hefty, K., 53
- Hitachi Data Systems (HDS), 212–214
- Hitachi Data Systems (HDS) Academy, 31
- Hoffman, R., 164
- Holton, E., 33, 281, 283
- Horizontal business functions, 191–192
- Howe, N., 31, 79
- Howe, S., 164, 165
- Human Capital Media, 4, 197
- Human resource development (HRD): access to SMEs by, 111; definition of, 33; dispelling misconceptions about technical training abilities of, 238; generalist work of, 32–33
- Human resource development representative (HRDR), 33
- Human resource (HR): mandatory/compliance-driven technical training tracked by, 277; organizational reporting models and role of, 188–199; technical training decision role by, 52; training partnership with, 110–111. *See also* Organizations
- Humphrey, M., 102
- Hurd, J., 110
- Hutchins, H., 280, 281
- I**
- IBM, 46, 245
- IBM Global Business Services, 11
- Implementation phase (ADDIE model): differentiators listed, 69*t*, 93*t*; learning and unlearning, 69*t*, 80–81, 93*t*; release timing, 69*t*, 81–82, 93*t*; volunteer instructors (VIs), 69*t*, 82–83, 93*t*; waterfall deployment, 69*t*, 83, 93*t*, 231
- Influence-Interest Grid, 114*fig*–115
- Informal learning: attempts to value cost of, 160–161; as training differentiator, 68*t*, 72, 93*t*
- “Instructional Design for Technical Training” (Combs & Peacocke), 43
- Instructional designers: description of, 198, 199–200; design role across ADDIE phases, 224*t*; Vangent’s three-legged stool model on, 201–203*fig*
- Instructional technologists, 202*fig*–203
- Integration, 126
- Intel, 53, 154
- ISO 9000, 25, 52
- Israelite, L., 49, 159
- IT (information technology) training: definitions of, 13; marketing technical training to, 241; similar challenges of technical training and, 232; training vendor’s marketing to, 247
- J**
- Jackson, S., 114*fig*, 115, 116*fig*–117
- Jarrett, M., 64, 174
- Jeary, T., 174, 175, 245, 246, 260
- Johnson, G. L., 240, 244
- Jones, R., 57, 161
- Jordan, m., 41
- Jusela, G., 112

K

Kalman, H., 124
 Kanar, A., 273
 Kaplan, N. J., 110
 Kaplan, R., 124
 Kearsley, G., 159
 Kelly, L., 12, 41, 43
 Kelly, T., 17, 153, 161, 175, 191
 Ken Blanchard Companies, 47
 Kirkpatrick, D., 173, 286
 Kirkpatrick four-level evaluation model, 173, 286
 Kirschner, R., 120
 Kozlowski, S., 273
 Kraus, T., 164

L

Laff, M., 174
 Lake Forrest Corporate Education study, 23
 Langlinais, T., 135
 Lawler, E., III, 62
 Lawver, T., 233
 Leadersphere, 286
 Lean Manufacturing, 52
 Learning: analysis phase of formal and informal, 68*t*, 72, 93*t*;
 implementation phase unlearning and, 69*t*, 80–81;
 valuing the costs of informal, 160–161. *See also* Transfer
 of training
 Learning management systems (LMSs): courses curriculums
 and impacting structure of, 227; description of, 31;
 distinguishing CBT, TBT, and, 32; technical training is
 being marketed as capacity of, 46; as technology capability,
 147, 222; tracking required training using, 277; training
 administrators to run, 200
 Learning Transfer System Inventory (LTSI), 283, 284
 Leaser, D., 4, 164, 168, 169
 Leck, K., 24, 59
 Lee, W., 210
 Legitimacy issues, 49–51
 Lesser, E., 57, 161
 LexisNexis, 126
 Light, D., 113
 Littlejohn, M., 11
 Live Communication Server 2005 (LCS), 263
 Llorens, J., 47
 Lock, K., 23
 Lockheed Martin, 149
 Losey, M., 233, 250
 Louisiana State University, 283
 Lovell, K., 170
 Lufthansa Passage, 180
 Lufthansa Technical Training (LTT) GmbH,
 178–180, 274
 Lufthansa Technik, 180

M

McGee, J., 125
 McLagan, P., 281
 McLean, C., 19
 McNamara, D., 56
 Maintenance manager training, 8, 28
 Maizler, J., 196

Management: budget, 175–184; curriculum, 198, 200;
 dispelling misconceptions about technical training
 among, 236–239; influencing employee's self-efficacy
 for training, 282; project, 195–196, 202*fig*, 203; talent,
 55–58; technical training support by, 36; training
 expectations of, 97, 100; transfer of training role of,
 282–284; value proposition for training presented to,
 62–64, 147–148*t*, 239, 244–246, 248, 261. *See also*
 Organizations
 Management training expectations: as funding issue,
 154–156; on skill gaps addressed, 97, 100; for tangible
 outcomes, 97
 “Managing Your HR Career” study (SHRM), 54
 Mandatory technical training, 276–278
 Manijak, P., 212
 ManTech University, 181
 Mapping stakeholders, 115–117
 Marketing competency: building, 232–234; specialization
 areas of, 233
 Marketing hurdles: building, marketing competency to
 overcome, 232–234; dispelling misconceptions to
 overcome, 236–239; reading signs of diminishing value to
 overcome, 239; underlying motivation for marketing to
 overcome, 234–235; understanding the product to
 overcome, 235–236
 Marketing plans: development of a, 252–253; Microsoft
 Unified Communications (UC) case study on, 262
 Marketing principles: brand technical training, 248–252;
 categorize and differentiate products, 247–248;
 choosing the right marketing tools, 253–256; define
 the target market, 246–247; describe the value
 proposition, 244–246; developing marketing plan,
 252–253
 Marketing technical training: common mechanisms for,
 256; common sense guidelines for, 256–260; hurdles to,
 232–239; Microsoft Unified Communications (UC) case
 study on, 261–263; principles of, 244–256; prospect of,
 260; reasons and benefits of, 229–232; “Seven Lessons
 Learned for Marketing Technical Training” (Johnson) on,
 240–244. *See also* Target audience
 Masie, E., 41, 235
 Measurability differentiator, 69*t*, 84–85, 94*t*
 Media specialists, 202*fig*, 203
 Medical training, 11
 Meisinger, S., 233, 250
 Mentoring, 271
 Microsoft, 76, 105
 Microsoft Certified System Engineers (MCSEs), 263
 Microsoft MCSE program, 242
 Microsoft Unified Communications (UC), 261–263
 Microsoft Ward technical training, 8, 28
 Miller, B., 178
 Mission statements: definition of, 129; development of, 130*t*;
 strategy and role of, 128–129
 Mitchell, J., 233
 Moore, J., 116*fig*
 Moore, M., 269
 Morgan, M., 123
 Morris, J., 289
 Morrissey, G., 129
 Morrow, J., 64, 174

Motivation: emotional drivers of, 104–105, 240, 256, 257–259; of engineers to take non-technical ASME courses, 20–22; marketing, 234–235; WIIFM (“What’s in it for me?”), 104–105, 240, 256
 Murphy, J., 234, 245

N

Nancherla, A., 63
 National Institute for Automotive Service Excellence (ASE), 139
 Neale, H., 30
 Needs: categories of training, 212, 214–216, 217*t*; Hitachi Data Systems (HDS) case study on training, 212–214; identifying technical training, 209–212; prioritizing technical training, 37, 219–221; stakeholder training, 96–98, 100–103, 210; training needs analysis, 210–212; training needs assessment, 210
 Newstrom, J., 279
 Nextel, 52
 Nickerson, D., 250, 252
 Nickols, F., 286
 Norton, D., 124
 “Not-invented-here” syndrome, 77
 Novell, 242
 NVIDIA Corporation, 156

O

Oberstein, S., 190
 Objectives: business, 125–127; strategic objectives (SOs), 130–131
 O’Driscoll, T., 175, 246
 Operating models: definition of, 135; overview of training, 136*fig*–137; purpose of, 135
 Operational technical training need, 212, 215, 217*t*
 Opportunity costs, 163
 Organization development (OD), 33
 Organizational structures: collaboration and governance, 105–112; training function, 188–192
 Organizational training factors: involvement in technology implementations, 51–52; legitimacy of technical training, 49–51; ownership of technology/enabling activities, 48–49; role in continuous improvement initiatives, 52–53
 Organizational training functions: centralization versus decentralization, 190–191; horizontal business functions, 191–192; reporting models of, 188–190
 Organizations: collaboration training provided to, 109–110; dispelling misconceptions about technical training in, 236–239; environmental factors of, 38–48; human resources partnership with training in, 110–111; leveraging training policies and processes of, 157–159; structure of the training function in, 188–192; training capabilities of, 54–62, 192–196, 222, 227; training challenges faced by, 35–38; training collaboration/governance in, 105–112, 121; transformation, 260. *See also* Employees; Human resource (HR); Management
 Ortiz, S., Jr., 308
 OSHA (Occupational Safety and Health Administration), 277–278
 Osterwalder, A., 132
 O’Toole, J., 62

Overarching differentiators: cost, 69*t*, 86–87, 94*t*; expertise, 69*t*, 87, 94*t*; listed, 69*t*, 94*t*; trust, 69*t*, 87–88, 94*t*
 Owens, D., 210
 Ownership, 156–157
 Oxholm, C., III, 290

P

Palmer, L., 132
 Paolo, T., 114*fig*, 115, 116*fig*, 117
 Paraglider, A., 25
 “Parking” employees, 87
 Parsons, C., 132
 Peacocke, S., 43, 105–106
 Peer mentors, 271
 Pelster, B., 174–175
 Penn, M. L., 53
 Performance Support Systems, Inc., 81
 Performance support systems technology, 147
 Personal effectiveness training: common complaints of, 19; definition of, 17; measurability of, 69*t*, 84–85; professional benefits of, 17–19; as technical training category, 26*fig*
 Peters, D., 135
 Peterson, M., 135
 Pharmaceutical company technical training, 14–16
 Phillips, J., 173
 Phillips, P. P., 173
 Phillip’s ROI methodology, 173
 Pilgrim, S., 156–157
 Piloting training, 266–267
 Planning horizon differentiator, 68*t*, 72, 93*t*
 Pokkert, G., 201, 203–204
 Prange, D., 204
 Precision Dynamics International, 192
 Prestera, G., 155, 177
 Prioritizing technical training: challenges related to, 37; closed-loop communication for, 221; decision making for, 219–221; factors to consider when, 220*t*
 Procedure content, 26, 27*t*
 Process capabilities, 143–145
 Processes content, 27*t*
 Product development: description of, 29; technical training on, 29–30
 Products: categorizing and differentiating, 247–248; development of, 29–30; marketing by understanding the, 235–236; portfolio of training services and, 137–138
 Professional trainers. *See* Technical training professionals
 Project/program management (PM), 223
 Project/program managers (PMs): design role across ADDIE phases, 224*t*; skills required by, 195–196; technical training roles of, 198, 199; technical training solutions through methodology of, 223; Vangent’s three-legged stool model on, 202*fig*, 203

R

 Rail industry technical training, 103–105
 Ready, D., 128
 Recruiting. *See* Technical training recruiting
Reengineering the Training Function (Shandler), 124–125
 Refresh cycles: as differentiator, 69*t*, 79, 93*t*; effort to shorten, 230

- Release timing, 69*t*, 81–82, 93*t*
- Remote technical training team, 205–206*t*
- Return of investment (ROI): as budget management issue, 172–175; evaluating training by measuring, 173, 286–287; Phillip's ROI methodology use of, 173; technical training, 69*t*, 84–85, 94*t*
- “The Return on Investment of Technical Training” (Morrow, Jarret, and Rupinski), 174
- Revolutionary technical training, 69*t*, 78–79, 93*t*
- Ringo, T., 57, 161
- Rohr, B., 103–104
- Rossett, A., 211
- Rothwell, W., 4, 12, 43, 51, 73, 84, 85, 127, 156, 191, 223
- Rupinski, M., 64, 174
- S**
- Sadykhova, I., 76
- Sandie, B., 88, 271
- SAP, 46
- Sarbanes-Oxley Act training, 8, 27
- Sarrel, M., 59
- “Scarcity mentality,” 258
- Schweyer, A., 57, 161
- Seamon, T., 274
- Self-paced simulations, 273
- Selix, G., 79
- “Seven Lessons Learned for Marketing Technical Training” (Johnson), 240–244
- Shandler, D., 124
- Sheldon, L., 200
- SHRM (Society for Human Resource Management): “Managing Your HR Career” study by, 54; talent management as defined by, 56; training data available through, 255; training as defined by, 8–9, 11
- Simulation technology, 147, 273–274
- Siviy, J., 53
- Six Sigma, 52
- Skill capabilities: building marketing competency and, 232–234; to execute training strategies, 142–143; of the technical training staff, 192–196
- Smalley, K., 211
- SMART Boards, 290
- SMART Technologies ULC, 290
- Social networking, 274–275
- Special Report (2008), 274
- Spilotro, K., 23, 24, 59
- Sponsors: championing training, 105–106; stakeholder involvement with, 98*t*
- Staff: managing the technical training team, 205–208; recruiting sources for, 204; structure of training function and role of, 188–192; technical training recruiting by, 196–200; technical training skills of, 192–196; Vangent's three-legged stool model of training, 201–204
- Staffing ratios, 197*t*–198
- Stakeholder engagement: case study on, 103–105; relationship skills for, 196; team approach to, 117–119; ways of facilitating, 259–260; WIIFM and emotional drivers of, 104–105, 240, 256, 257–259
- Stakeholder training needs: executive expectations on tangible outcomes, 97; gathering input on, 210; manager on having skill gaps addressed, 97, 100; overview of, 96–97; technical experts wanting accurate content, 101–102; technical leaders need for technology support, 100–101; volunteer instructor (VI) providing training, 102–103
- Stakeholders: brand experience of, 249–250; closed-loop communication with, 221; collaboration and governance structures of training and, 105–112, 121; definition of technical training, 50; different technical training expectations by, 247–248; forms of involvement by, 98*t*–99*t*; identification and classification of, 113–117; Influence-Interest Grid of, 114*fig*–115; mapping, 115–117; marketing feedback from, 254–255; support and buy-in by, 36, 112–120; technical training life cycle participation by, 227; technical training needs of, 96–98, 100–103, 210; techniques for managing, 119–120; training readiness of, 220*t*; WIIFM (“What's in it for me?”) and emotional drivers of, 104–105, 240, 256, 257–259. *See also* Employees; Technical training
- Stambaugh, B., 124
- Standard Insurance Company, 41
- Standardization, 69*t*, 79–80, 93*t*
- State of the Industry survey (2008) [ASTD], 47, 97, 170
- Steering committees, 111–112, 158
- Stimulus Response Team (IBM Global Business Services), 11
- Stone, R., 173
- Stone, S., 19
- Staker, D., 114
- Strandy, K., 272
- Strategic objectives (SOs), 130–131
- Strategic technical training needs, 212, 214, 217*t*
- Strategies: alignment to business objectives, 125–127; business and operating models of, 132–137; capabilities to execute, 142–147; definition of, 124–125; guiding principles of, 131–132; objectives of, 130–131; portfolio of training products/services used with, 137–138; strategic planning process, 127–128; technical training roadmap for using, 140–141*fig*; Toyota Motor Sales USA, Inc. case study on, 139–140; vision and mission statements components of, 128–130*t*
- Strategy capabilities: business process components of, 145; process-related, 143–145; skill-related, 142–143; technology-related, 146–148*t*
- Structures: governance and collaboration, 105–112; LMSs (learning management systems), 31–32, 46, 147, 200, 222, 227, 277; organizational, 105–112, 188–192
- Subject-matter experts (SMEs): accurate training content role of, 101–102; contextualization by, 69*t*, 76, 93*t*; course development considerations by, 224, 226*t*; definition of, 101; efforts to increase pool of, 230; granularity of content challenge for, 69*t*, 75, 93*t*; HRD (human resource development) access to, 111; importance of training involvement by, 288; instructional designers working with, 198, 199–200, 201–202*fig*; as peer mentors, 271; piloting versus content validation by, 266; sharing training development information with, 225; suitability as VIs, 269; training as “extracurricular activity” for, 2259. *See also* Technical training professionals; Volunteer instructors (VIs)
- Succession planning process, 57

- Sugure, B., 175, 246
 Summative training evaluation, 285–286
 Sun Microsystems, 79
 Sussman, D., 49, 177, 233
 Swanson, R., 33
- T**
- Tagliatela College of Engineering, 24
 Talent management: as HR focus, 55; integrating technical training into, 55–58*t*; recruiting and hiring process of, 56; SHRM's definition of, 56; succession planning process of, 57; training aspect of, 56–57
 Target audience: defining the market and, 246–247; importance of marketing to your, 243; Microsoft Unified Communications (UC) case study on, 262; of training vendors, 247. *See also* Marketing technical training
the Targeted Evaluation Process: A Performance Consultant's Guide to Asking the Right Questions and Getting the Results You Trust (Combs & Falletta), 288
 Targeting potential learners, 243
 Taxonomy: definition and function of classic, 33; developing a training, 33–34
 Team charter: description of, 106–107; sample of curriculum maintenance, 107–109
 Teams: advisory, 106–109; charter on roles and expectations of, 107–109; stakeholder engagement through, 117–119; steering committees, 111–112. *See also* Collaboration training structure; Technical training team
 Technical experts. *See* Subject-matter experts (SMEs); Volunteer instructors (VIs)
 Technical functional training: definition of, 12–13; observed benefits of, 16; as technical training category, 26*fig* *Technical Skills Training Magazine* (ASTD), 45
 Technical trainers, 198, 200. *See also* Technical training professionals
 Technical training: assessing needs for, 96–98, 100–103, 209–227; branding, 248–252; characterizing at a pharmaceutical company, 14–16; closed-loop communication on, 221; collaboration and governance structures of, 105–112, 121; cost issues of, 43–44, 69*t*, 86–87, 94*t*, 159–177, 236–237; definitions of, 8–12; demystifying the process of, 1–5; developing a common language for, 33–34; dispelling myths of, 38; employee retention and, 165–166; evaluating, 69*t*, 78–86, 94*t*, 99*t*, 173, 175–176, 278–288; evolution of, 40–42; human resources partnering in, 110–111; legitimacy of, 49–51; mandatory and compliance-driven, 276–278; marketing, 229–263; perception versus reality of, 42–45; prioritizing, 37, 219–221; products and services portfolio used for, 137–138; providing employees with options for, 103; return of investment (ROI) on, 69*t*, 84–85, 94*t*, 172–175; strategies for, 123–149; three key areas of, 25–26*fig*; value proposition of, 16, 62–64, 147–148*t*, 239, 244–246, 248, 261; vendor-supplied, 223–224, 275–276; WHIFM (“What’s in it for me?”) question on, 104–105, 240, 256. *See also* Employees; Stakeholders; Training
 Technical training activities: customer training, 30–31; human resource generalist work, 32–33; product development, 29–30; scheduling of, 231; technology and computer-based training, 31–32
 Technical training case studies: driving technical excellence at Electronic Arts, 88–91; getting stakeholders to embrace technical training in rail industry, 103–105; Hitachi Data Systems (HDS) on training needs, 212–214; learning technology at Drexel University, 289–293; Lufthansa Technical Training (LTT) GmbH funding, 178–180, 274; making technical training priority at TriQuint Semiconductor, 64–66; Microsoft Unified Communications (UC), 261–263; motivating engineers to take non-technical ASME courses, 20–22; technical training at Toyota Motor Sales, 139–140; Vangent’s three-legged stool model, 201–204
 Technical training categories: business training as, 22–25, 26*fig*; personal effectiveness training as, 17–18, 26*fig*; Technical functional training, 12–13, 16, 26*fig*
 Technical training challenges: dispelling myths of technical training as, 38; sources of, 35; training professionals’ perspective on, 36–37
 Technical training content: advisory teams developing, 106–107; ASTD classifications of, 44; availability of, 69*t*, 74–75, 93*t*; concept, 27*t*, factual information, 27*t*; granularity of, 69*t*, 75, 93*t*; need for technically accurate, 101–102, 231; non-reliance of vendor-supplied, 281–282; piloting, 266–268; procedure, 26, 27*t*; processes, 27*t*; sample team charter for maintenance of curriculum, 107–109; stakeholder role in development of, 99*t*; technology-enabled development of, 148*t*; VI exposure to, 26*t*. *See also* Curriculum managers
 Technical training courses: “build versus buy” decision on, 223–224; categorizing into curriculums, 225–227; cost issues of, 43–44, 69*t*, 86–87, 94*t*, 159–177, 236–237; development considerations for, 226*t*; funding, 37, 46–48, 98*t*, 175–180; products and services portfolio for, 137–138; stakeholder’s participation throughout life cycle of, 227. *See also* Technical training programs
 Technical training delivery: challenges related to, 37; evaluating, 278–288; modes of, 270–278; preparation for, 265–270; stakeholder role in, 99*t*
 Technical training delivery modes: classroom, e-learning, and blended training, 270–272; hands-on components and simulations, 272–274; mandatory and compliance-driven training, 276–278; social networking and collaborative technology, 274–275; vendor-supplied technical training, 275–276
 Technical training delivery preparation: establishing a VI base, 267–269; piloting training solutions, 266–267; preparing instructors for, 269–270
 Technical training design: building technical training courses, 223–225; challenges related to, 36–37; developing technical training programs, 222–223. *See also* Design phase (ADDIE model)
 Technical training differentiators: ADDIE model and overarching, 69*t*, 86–88; ADDIE phases and, 68*t*–69*t*, 70–86; during analysis phase, 68*t*, 70–74; description of the, 67–68; during design phase, 69*t*, 74–78; during development phase, 69*t*, 78–80; during evaluation phase, 69*t*, 84–86; during implementation phase, 69*t*, 80–83
 Technical training factors: capability aspects, 54–62, 147, 192–196, 222, 227; environmental, 38–48; organizational

- considerations, 48–53; value proposition for training, 62–64, 147–148*t*, 239, 244–246, 248, 261
- Technical training needs: assessing stakeholder, 96–98, 100–103, 210; career development, 212, 215–216, 217*t*; categories of, 212, 214–216, 217*t*; competency development, 212, 215, 217*t*; Hitachi Data Systems (HDS) case study on, 212–214; identifying, 209–212; needs assessment considerations, 218*t*; operational, 212, 215, 217*t*; opportunities for data gathering on, 216, 218; prioritizing, 37, 219–221; strategic, 212, 214, 217*t*; training needs analysis, 210–212; training needs assessment, 210
- Technical training portfolio: description and functions of, 137–138; listed, 138
- Technical training professionals: curriculum managers, 198, 200, 224*t*, 226*t*; hiring and development of, 208; instructional designers, 198, 199–200, 201–203*fig*, 224*t*; perspective on, 36–37; project/program managers (PMs), 195–196, 198, 199, 202*fig*, 203, 224*t*; recruiting, 197*t*–198, 198–200, 204; recruiting by and for, 197*t*–200, 204; technical trainers, 198, 200; train-the-trainer (TTT) sessions for, 269–270; types of, 198–200. *See also* Subject-matter experts (SMEs); Technical training team; Training; Volunteer instructors (VIs)
- Technical training programs: assessing needs and prioritizing, 37, 96–98, 100–103, 209–218; “build versus buy” decision on, 223–224; designing, 36–37, 68*t*–93*t*, 222–227; employee retention and, 165–166; evaluation of, 284–288; products and services portfolio for, 137–138; stakeholder’s participation throughout life cycle of, 227. *See also* Technical training courses
- Technical training recruiting: for common technical training jobs, 198–200; sources for, 204; staffing ratios and, 197*t*–198
- Technical training roadmap, 140–141*fig*
- Technical training skills: business skills for credibility, 193–194; to execute training strategies, 142–143; project management skills for discipline, 195–196; relationship skills for stakeholder engagement, 196; team development of, 206–208; technical skills for accuracy, 194–195; training skills for expertise, 193
- Technical training team: managing the, 205–208; recruiting sources for, 204; remote management of, 205–206*t*; structure of training function and role of, 188–192; technical training recruiting by, 196–200; technical training skills of, 192–196; Vangent’s three-legged stool model of, 201–204. *See also* Teams; Technical training professionals
- Technology: content authoring/management systems, 147; evolutionary versus revolutionary, 69*t*, 78–79; groupware/collaborative, 147, 274–275; ownership as technical training issue, 48–49; performance support systems, 147; simulation, 147, 273–274; technical training role in implementing, 51–52; training for support of, 100–101; TransferLogix, 282–284
- Technology capabilities: content development enabled by, 148*t*; training strategies requiring, 146–147
- Technology-based training (TBT): description of, 31; distinguishing CBT, LMS, and, 32; hands-on components of, 272–273; simulations as, 147, 273–274
- Technstream training (Toyota Motor Sales), 272
- Tektronix, 102
- Templeton, D., 154
- 1080 Group, LLC, 248
- Thomas, R., 113
- Three-dimensional graphics technology, 147
- Three-legged stool model, 201–204
- Total Quality Management (TQM), 52
- Toyota Motor Sales USA, Inc., 139–140, 271–272
- Train-the-trainer (TTT), 269–270
- Training: ASME courses for, 20–22; ASTD estimates on annual costs of, 43–44; business, 22–25, 26*fig*; CBT (computer-based training), 31, 32; customer, 30–31; IT (information technology), 13; personal effectiveness, 17–19, 26*fig*, 69*t*, 84–85; SHRM’s definition of, 8–9, 11; technical functional, 12–13, 16, 26*fig*; technical versus non-technical, 166–170; transfer of, 99*t*, 278–284; vendor-supplied, 223–224, 281–282. *See also* Technical training; Technical training professionals
- Training administrators, 198, 200
- Training executive, 198–199
- Training Industry, Inc., 42, 84, 157, 229, 255
- Training manager, 198, 199
- Training needs analysis, 210–212
- Training needs assessment, 210
- Training professionals. *See* Technical training professionals
- Training skills. *See* Technical training skills
- Training taxonomy, 34
- Transfer of training: description of, 278; evolving definitions of, 279; Learning Transfer System Inventory (LTSI) of, 283, 284; management role in, 282–284; means and functions of technical, 278–279; research on, 280*t*–281*t*; stakeholder role in, 99*t*; TransferLogix technology for managing, 283–284. *See also* Learning
- TransferLogix, 282–284
- Transformation organizations, 260
- Transit industry blending training, 272
- Trigger differentiator, 68*t*, 71
- TriQuint Semiconductor, 64–66
- Trolley, E. A., 160
- Trust: closed-loop communication to build, 221; as overarching differentiator, 69*t*, 87–88, 94*t*
- Turner, C., 126
- ## U
- Ulrich, D., 233, 250
- University of New Haven, 24
- University of Pennsylvania, 235
- Unlearning, 69*t*, 80–81
- U.S. Environmental Protection Agency, 277, 287
- U.S. News & World Report*, 289
- ## V
- Value proposition for training: ASTD study on perceptions of, 245–246; creating, 62–64; examples of technical training benefits, 147–148*t*; marketing and establishing the, 244–246; Microsoft Unified Communications (UC) case study on, 261; multiple benefits of training, 248; reading signs of diminishing, 239
- Vance, D., 127, 131

Vendor training: “build versus buy” decision on, 223–224; nonrelevant information included in, 281–282; technical training through, 275–276

Vendors: “build versus buy” courses from, 223–224; reducing prices of, 183–184; target markets of, 247; technical training supplied by, 275–276; 1080 Group, LLC, 248

Vision statements: definition of, 129; development of, 130; strategy and role of, 128–129

VOLT Resource Website, 22

VOLT (Volunteer Orientation and Leadership Training Academy), 21

Volunteer instructors (VIs): as ADDIE model implementation role of, 69*t*, 82–83, 93*t*; definition of, 102; developing pool of, 143; efforts to increase pool of, 230; establishing a base of, 267–269; importance of training involvement by, 288; making engagement easy for, 259; sharing training development information with, 225; SMEs suitability as, 269; stakeholder instruction using expertise of, 102–103; technical experts chosen as, 200; training delivery preparation of, 269–270. *See also* Subject-matter experts (SMEs); Technical training professionals

Vona, M., 175, 246

W

Waagen, A., 162, 177

Wang, C., 23, 24, 59

Wang, G., 285, 286

Watson, T. J., 5

Waterfall training deployment, 69*t*, 83, 93*t*, 231

Weatherly, L., 32, 33, 173, 175

Weaver, P., 73

Web conferencing technology, 147

WebEx training, 272

Weinstein, M., 272

Wells, S., 4

“What HPLOs Know” (Sussman), 49

Wickman, E., 19, 47, 48

WIIFM (“What’s in it for me?”), 104–105, 240, 256

Wilcox, D., 285, 286

Wilson, J., 214, 221, 287

Woods, E., 34

Y

Yamkovenko, B., 283