### Index

<table>
<thead>
<tr>
<th>A</th>
<th>110</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-box</td>
<td>12</td>
</tr>
<tr>
<td>abnormal entities</td>
<td>52</td>
</tr>
<tr>
<td>abstract merging task</td>
<td>60</td>
</tr>
<tr>
<td>abstract roles</td>
<td>303</td>
</tr>
<tr>
<td>action</td>
<td>91, 111, 145</td>
</tr>
<tr>
<td>action concept</td>
<td>147</td>
</tr>
<tr>
<td>action dependency</td>
<td>138</td>
</tr>
<tr>
<td>action direction</td>
<td>81</td>
</tr>
<tr>
<td>action modus</td>
<td>82</td>
</tr>
<tr>
<td>action objects</td>
<td>74</td>
</tr>
<tr>
<td>actions in contract phase</td>
<td>82</td>
</tr>
<tr>
<td>action workflow (AW)</td>
<td>75</td>
</tr>
<tr>
<td>Active Badge System</td>
<td>279</td>
</tr>
<tr>
<td>activities</td>
<td>108</td>
</tr>
<tr>
<td>activity-oriented models</td>
<td>125</td>
</tr>
<tr>
<td>activity theory (AT)</td>
<td>104</td>
</tr>
<tr>
<td>actor</td>
<td>89, 124, 130, 313</td>
</tr>
<tr>
<td>actor, data, and process-oriented (ADP) approach</td>
<td>301</td>
</tr>
<tr>
<td>actor, data and process-oriented (ADP) framework</td>
<td>295</td>
</tr>
<tr>
<td>actor network theory (ANT)</td>
<td>96</td>
</tr>
<tr>
<td>actor properties</td>
<td>199</td>
</tr>
<tr>
<td>adaptive and autonomic computing</td>
<td>6</td>
</tr>
<tr>
<td>adaptive autonomic computing</td>
<td>5</td>
</tr>
<tr>
<td>adaptive business networks</td>
<td>327, 332</td>
</tr>
<tr>
<td>ADONIS</td>
<td>357</td>
</tr>
<tr>
<td>ADP-based KM analysis</td>
<td>304</td>
</tr>
<tr>
<td>agency</td>
<td>103</td>
</tr>
<tr>
<td>agency-structure duality</td>
<td>102</td>
</tr>
<tr>
<td>agency theory</td>
<td>163</td>
</tr>
<tr>
<td>agency theory and ICT management</td>
<td>163</td>
</tr>
<tr>
<td>agent</td>
<td>193</td>
</tr>
<tr>
<td>agent-driven modeling</td>
<td>127</td>
</tr>
<tr>
<td>agent-orientation</td>
<td>123</td>
</tr>
<tr>
<td>agent-oriented enterprise model</td>
<td>122, 128</td>
</tr>
<tr>
<td>agent-resource duality</td>
<td>109</td>
</tr>
<tr>
<td>agent architecture</td>
<td>110</td>
</tr>
<tr>
<td>agent cognitive architectures</td>
<td>107</td>
</tr>
<tr>
<td>agentified group</td>
<td>134</td>
</tr>
<tr>
<td>agentify group function</td>
<td>136</td>
</tr>
<tr>
<td>agent interactions</td>
<td>112</td>
</tr>
<tr>
<td>agent orientation</td>
<td>124</td>
</tr>
<tr>
<td>agent oriented software engineering (AOSE)</td>
<td>106</td>
</tr>
</tbody>
</table>

| agent role set | 110 |
| agents | 93, 124 |
| AI (artificial intelligence) | 250 |
| alternate task | 60 |
| ambient intelligence | 279 |
| ANSI 3-level architecture | 355 |
| ANSI 3-schema architecture | 354 |
| ANSI reference model | 355 |
| answer set programming (ASP) paradigm | 198 |
| ANT approach | 96 |
| application domains | 278 |
| application level | 355 |
| application ontology | 281 |
| APQC process classification framework | 242 |
| architecture of integrated information systems (ARIS) | 357 |
| Aristotelian approach | 23 |
| Aristotelian ontologies | 21, 23, 24 |
| Aristotelian ontologies, logical point of view | 25 |
| Aristotelian ontologies in OWL, simulating | 26 |
| Aristotelian ontology of Condillac Research Group | 26 |
| artifacts | 89 |
| artificial intelligence (AI) fields | 102 |
| artificial intelligence techniques | 383 |
| association relations | 199 |
| assumption of inherent classification | 41 |
| attributes | 217 |
| authorization | 150 |
| authorization concept | 150 |
| automated deductive reasoning | 1 |
| automated system cooperation | 224 |
| automatic actions | 92 |
| autopoiesis | 102 |
| axioms | 200 |

<table>
<thead>
<tr>
<th>B</th>
<th>110</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2B (business-to-business)</td>
<td>73</td>
</tr>
<tr>
<td>B2C (business-to-consumer)</td>
<td>73</td>
</tr>
<tr>
<td>back office system (BOS)</td>
<td>61</td>
</tr>
<tr>
<td>banking industry</td>
<td>311</td>
</tr>
<tr>
<td>basic description and situation (DnS) CODEP</td>
<td>55</td>
</tr>
<tr>
<td>basic formal ontology (BFO)</td>
<td>39</td>
</tr>
<tr>
<td>BAT model</td>
<td>71</td>
</tr>
</tbody>
</table>
BAT model, assessment phase 83
BAT model, contractual phase 82
BAT model, essential concepts 74
BAT model, fulfilment phase 82
BAT model, overview 73
beginning task 59
behavioral knowledge 211
behavior of a system 353
belief 151
belief concept 151
BFO instantiation 44
BFO ontology 41
bona fide entities 39
boundary condition 145
boundary condition concept 146
BPI (business process improvement) 295
BPR (business process reengineering) 295
building information support system 263
Bunge-Wand-Weber (BWW) ontology 54
business-IT gap 238
business action 74
business action theory (BAT) 70
business engineering methods 353
business interaction 22, 49, 351, 360, 369
business interaction, levels of 73
business interaction models 70
business life worlds 208
business modeling 52
business modeling, example of 60
business partner management with ontologies 327
business partner profiles 340
business partner relationship management 336, 338
business phase 74
business process chain 351
business processes 223, 351
business process execution language (BPEL) 22
business process execution language for Web services (BPEL4WS) 53
business process management notation (BPMN) 53
business process modeling (BPM) 125
business process modeling language (BPML) 353
business transaction 73, 74
business transformation 237
business value level 312

C
capability 132
capability concept 134
cardinalities 9
CATWOE 214
causal cognitive mapping 208
causal cognitive maps 212
causal mapping 212
center ontology 372
CEO framework 106
CEO framework, concepts of 108
choreographies 37
CIMOSA models 190
Cisco Systems 311
classes 8, 9, 217
classes in the OWL ontology 27
classification 23
classification analysis 23
class popularity 296
CM applications 36
CM technology 36
coded application procedure 5
cognitive map 212
cognitive mapping workshops 214
cognitive modeling 107
cognitive models 108
collaborative learning 213
collective memory 36
COMA 367, 368
commercial business engineering 351
common understanding 21
communication 93
communication and ontology 333
communication language 266
communities of practice (CoP) 299
comparison function COM 388
COMPASS2008 project 280
COMPASS system 281
compatibility vectors 373
compatibility vectors, dynamic adjustment 374
compatibility vectors, experiments 380
compatibility vectors, features of 376
compatibility vectors, utilities of 375
compatibility vector system 371
completeness 180
component business modeling (CBM) 244
computational language 262
computer-aided ontology editors 383
computer-integrated manufacturing open-system architecture (CIMOSA) 190
computing 1
concept distance 372
concept distance calculation 372
concepts 8, 37
conceptual coverage 179
categorical permission 366
categorical values 366
configuration of the activities 315
conflict concept 143, 144
conflict submodel 130, 143
consensual ontology 23
consequential actions 92
content ontology 283
content ontology design pattern (CODeP) 54
content ontology design patterns (CODePs) 49, 52
core applications 279
core awareness 299
core and situation awareness 287
core aware systems 351
core changes 285
core contexts 109
core context subsystem 289
core continuants 39
core contract ontology 63
contracts data model pattern 60
contracts ontology 64
contractual agreement 314
corporate clients 319
corporate knowledge 218
corporate knowledge portals 218
corporate memories (CM) 35, 36, 174
corporate memories (CM), environmental model 35
corporate memory, referent tracking 35
corporate memory systems 36
corporate process model 214
CRM (customer relationship management) 245
cross-organizational business processes 223
cross-organizational business process integration 312
claw 367, 368
customer management 327
customer relationship management (CRM) 328
customer service representative (CSR) 61
Cyberguide project 280

deep chain of models 242
DAML+OIL 384
data 4
database management systems (DBMS) 354
database management system supports 237
databases 15
data interoperability 1
data manipulation and querying 18
data mining 23
data model 15
data model patterns 53
data query engine 266
data representation structure 266
data properties 28
del.icio.us 18
delegation 196
delegation and trust 199
delegation of execution 197
delegation of permission 197
deliberation task 60
Dell Computers 311
dependency analysis 243
dependency path 313
dependent entities 39
dependum 138
dependence concept 139
description 55
descriptive ontology for linguistic and cognitive engineering (DOLCE) 191
design ontologies 209
design parameters (DP) 261
design science paradigm 172
difference 23
differentia specifica 24
digital business ecosystem 345
directly related actions 97
DnS CODeP 56, 57
document location 208
DOLCE 54
domain-independence 299
domain ontologies 337, 281
domain ontologies, approaches to 23
domain ontology modeling languages 21
domains 9, 217
draft portal 218
dynamically adjusting vectors 374
dynamic business ecosystems 330
dynamic service offers 278

E
e-action 92
e-business 367
e-business capabilities 366
e-business community (EBC) 369
e-business environment 369
e-business partners 366
e-service environments 368
e3value 312
e3value modeling concepts 312
e3value ontology 311, 312
e3value constructs 316
e3value construct set 316
e3value model 314
e3value ontology 324
EA modeling framework 106
ey requirements engineering 122
ebXML 53
eclipse modeling framework (EMF) 250
electronic commerce 392
electronic data interchange (EDI) 360
electronic health record (EHR) 41
electronic markets 223
electronic store 94
emergency response support 281
emerging business opportunities 327
ending task 60
English syntax 18
enriched contextual matching 371
enterprise-scale ontology management system 238
enterprise application integration (EAI) 328
enterprise architectures (EA)  102, 105
enterprise business interaction modeling  49
enterprise business modeling  52
enterprise distributed object computing (EDOC) 353
enterprise distributed systems  294
enterprise engineering  190
enterprise engineering methodologies  190
enterprise knowledge development (EKD) 126
enterprise knowledge management (EKM) 328
enterprise memory  174
enterprise model  35, 123
enterprise model, overview of  128
enterprise modeling  122
enterprise modeling, small-scale roadmap  52
enterprise ontology (EO) 36, 37, 54, 106, 125, 190
enterprise ontology systems  35
enterprise portal  343, 344
Enterprise Project, The  37
enterprise representations  107
enterprise resource planning (ERP)  328
entities  108
entity-relation (ER) modeling  250
entity-relationship (E/R) diagrams  53
environmental actor  319
environmental data integration  362
environmental model  35
EPC (event-driven process chains) 359
epistemological approach to ontologies  21
epistemological ontologies  24
equity investment  314, 316
European Research Project CIMOSA  44
evaluation subsystem  290
event  152
event-driven process chains (EPC) 53, 353
event concept  152
event driven process chain markup language (EPML) 360
exclusive choice  62
existing business modeling language  88
existing enterprise representations  107
expert knowledge  22
expert systems  15
explicit representation of meaning  1
extensible business reporting language (XBRL) 31
extensional predicates  198
externalization  104
formal conceptual systems  23
formal description languages  223
formal logical semantics  1
formal ontologies  22
frames  55
front office value activities  320, 322
functional relationships  302
functional requirements (FR)  261
function view  190
fundamental business process modeling language (FB- PML) 303
G
G-SDAM 353
G-SDAM Grid data middleware  362
genera  23
generalized enterprise reference architecture and methodology (GERAM) 190
genus  23
genus proximum  24
GFO-GOL  54
global conceptual model  241
global data structure (GDS)  361
global economy  366
global repository node (GRN) 361
global semantic model  241
GLUE  367, 368
goal  140
goal, temporal behavior of  142
goal-based modeling  126
goal-driven modeling  126
goal analysis  199
goal concept  141
goal diagram  195
goal refinement alternative  143
goal refinement alternative concept  143
goals submodel  130, 140
granular partition theory  40
graphical e3value ontology editor  312
GRID environment  356
Grid infrastructure  353, 360
Grid semantic data access middleware (G-SDAM) 360
Grid technology  360
group  134
group concept  135
group memory  174
group structure  134, 136
group structure concept  137
H
heat map analysis  244
hierarchical relationship  302
high-level Petri nets  353
high level enterprise process model  215
high level ontology diagram  217
Index

highly specialized knowledge bases 351
human actions 89
human beings 101
human driven business interactions 22
human inner world 89
human multitasking 115
humans 89
hybrid matching technique 368

I

i* modeling framework 127
i* modeling language 191
i-actions 91
ICT assets 159
ICT core constructs 156
ICT evaluation 159, 160
ICT infrastructure 327
ICT infrastructure collaborative data 336
ICT infrastructure layer 332
ICT literature 158
ICT management (ICTM) 156, 161
ICT management core constructs 159
ICTM core constructs 156, 163
ICTM ontological framework 161
ICTM theories 161
ICT ontologies 157
ICT policy 159, 160
ICT projects 159
IFCS taxonomy 53
IMAGE 256
implicit knowledge 13
indefinite actions 91
independent entities 39
indirectly related actions 97
individual, family, city, and state (IFCS taxonomy) 53
individualized marketing 327
individual memory 174
industry-strength ontology management system 246
inference engine 247
information-logical evaluation 287
information-system perspective 129
informational dependency 51
informational resources 149
information and communication technologies (ICT) 156
information collection, overview 212
information collection method 213
information extraction 368
information integration and interoperability 5
information modeling 257, 267
information objects 55
information organization framework 254
information overload 299
information processing 2, 197
information quality 150
information retrieval (IR) 352, 354
information retrieval techniques 351

information services 1
information support reference model 264
information system (IS) 122, 264
information system architecture (ISA) 256
information system infrastructures 259
information system requirements engineering 122
information systems (IS) 88, 102, 172, 188
information system support (ISS) 254, 255
information technology (IT) 352
information view 190
instance popularity 296
instances 8, 9
instance unique identifiers (IUIs) 41
intelligent agents 5
intelligent reasoning 5, 6
intelligent search 6
intentional collectives 96
intentional predicates 199
interaction model 191
interface-semantic Web 265
internal business processes 37
internalization 104
interoperability 22
interorganizational business process 224
interorganizational business process models 223
intranet design schema 218
intranet knowledge portals 208
inventory level (IL) 266
inventory replenishment 258
IT semantics 239
IUI-repository 42

J

Java API 247
Java Data Base Connector (JDBC) 246, 247
Java Ontology Base Connector (JOBC) 246, 247, 248
JOBC query 249
JOBC statement 249
jointly performed value activity 316
joint venture 314, 316

K

KAON2 233
KAON infrastructure 334, 343
KAON ontologies 334
KAON query module 344
KAOS framework 126
KAOS specification 126
key performance indicators (KPI) 239
kind of contracts (KoC) 63
kinds of contracts (KoC) 60
knowledge, eliciting 211
knowledge, expressing 8
knowledge-based control 51
knowledge-based economy 52
knowledge acquisition 368

419
knowledge buildup 383
knowledge conceptualization 261
KnowledgeEco 171
KnowledgeEco, SM lifecycle 177
KnowledgeEco evaluation rules 182
KnowledgeEco in detail 174
KnowledgeEco ontology 172, 177
knowledge elicitation 215
knowledge elicitation methodology 214
knowledge management (KM) methods 295
knowledge management functions 294
knowledge management support 294
knowledge management system 209
knowledge management systems solutions 208
knowledge management tools 216
knowledge objects 219
knowledge of the system 353
knowledge ontology 208
knowledge portals 218
knowledge repository 176
knowledge requirements for information systems 210
knowledge resource 171
knowledge support for OM 385
knowledge technology 176
knowledge technology solutions 211
knowledge work 208, 210

L
language/action (L/A) community 75
language action perspective (LAP) 88
language game 211
large scale data manipulation and querying 18
large scale semantic markup of existing data 18
library of matching algorithms 368
linguistic and structural schema-matching techniques 368
linguistic similarity matches 367
Linnaeus taxonomies 23
local data node (LDN) 361
location and time ontologies 278
location ontology 282
logic oriented ontology languages 22
loosely coupled business processes 223

M
management-software agents 265
management pyramid 157
mapping rules 361
market segment 313, 319
material commission 225
meta-model 89
meta-model of SIP 95
metadata 3, 4, 338
metadata tags 3
MetaKnowledge 176
mobile computing 287
Mobile Emergency Assistant 281
mobile users 278
mobile users, dynamic demands 278
model-driven applications 5, 6
model-driven approach 237
model-driven architecture 240
model-driven business transformation 238, 239
model-driven business transformation approach 241
ModelAccess 288
model driven architecture (MDA) 53, 250
modular application ontology 278
modular ontology architecture 282
modular service ontology schema 284
MOISE+ 191
MONA system 281
money market 319
multi-agent systems (MAS) 190
multi metamodel process ontology (m3po) 37
multiple machine learning strategies 368
multitasking behavior 115
MUSING (MUlty Industry Semantic based Next Generation Business Intelligence) 32

N
natural environment 89
natural kinds 23
natural language analysis techniques 179
natural language semantics 23
nature of the activities of a partnership 315
NeOn project (NeOn) 65
network typology 338
new vector generation 376
nonagentified group 136

O
object-orientation 104
object-oriented system design 255
object dependency 139
object property classes 28
objects 90
objects submodel 130
object submodel 149
occurrents 39
ODAMY 331, 342
OM (ontology merging) algorithm 389
OM algorithm 385
OM algorithm for automatic merging of ontologies 387
OM components 174
OM in real-world examples 401
OM notation 384, 385, 386
OM notation, contributions in 387
on-demand business 21
ontological categories 89
ontological conceptions 208
ontological modeling 125
ontologies 1, 3, 4, 49, 211, 255, 354
ontologies, Aristotelian 21
ontologies, automatic merging 383
ontologies, components 10
ontologies, epistemological approach 21
ontologies, exploring 8
ontologies, features of 12
ontologies, rules 13
ontologies, tools 13
ontologies, virtual structures 12
ontologies for business interaction 49
ontologies for model-driven business transformation 237
ontologies vs. databases 15
ontologies vs. data models 15
ontologies vs. expert systems 15
ontologies vs. taxonomies 15
ontologies vs. unified modeling language (UML) 15
ontologies with process modeling techniques 359
ontology 168, 226, 237, 255, 258, 260, 262, 312, 334, 384
ontology, example 10
ontology-based community awareness 51
ONTology-based community of practice identifier (ON- TOCOPI) 299
ontology-based information retrieval model 368
ontology-based information systems 351
ontology-based partner selection 366
ontology-based querying 338
ontology-based query techniques 352
ontology-based service provision 280
ontology-based service selection 281
ontology-driven approaches to enterprise modeling 125
ontology-driven information system 255, 260
ontology-driven information system (ODIS) 255, 262
ontology-merging algorithms 367
ontology-ontology server 266
ontology application in e-service 368
ontology as information system support 254
ontology as knowledge map 216
ontology based communities of practice identifier 300
ontology changes 286
ontology compatibility vector system 370
ontology components 11
ontology construction of ICTM 158
ontology constructs 9
ontology constructs, classes 9
ontology constructs, typical 9
ontology content 12
ontology definition metamodel (ODM) 250
ontology design for interaction 49
ontology design patterns 51
ontology development 173
ontology development framework for information modeling 267
ontology directory 247
ontology editor 255
ontology engineering 51, 52
ontology engineering projects 51
Index

OWL-Lite 12, 13
OWL-QL (OWL query language) 357
OWL-S 6, 22
OWL-S (OWL for services) 233
OWL API 335
OWL DL 334
OWL Full 12, 334
OWL Lite 334
OWL modeling 21
OWL ontologies 7
OWL Services Coalition 6
OWL syntax 227
OWL tools 23

P

participative simulation environment for integral manufacturing renewal ontology (PSIM) 44
particulars 39
partition units 40
partnership relationship management 329
personal action contexts 116
personal goal 142
personalization 287
Petri Net markup language (PNML) 224
Petri Net ontology 228, 230
Petri Nets 53, 223, 225
Petri Net variants 225
philosophical theories of meaning 23
physical data 3
physical domain representation 261
physical resources 149
plan 57, 148
plan concept 148
plan elements 58
plan execution 58
Plans CODEP (PO) 57
plan tasks taxonomy 59
portion of reality (POR) 40
POVOO 351, 352
POVOO, IR mechanism 359
POVOO, view-based query process 359
POVOO ontologies 358
POVOO querying mechanisms 358
POVOO scenario virtual organizations 361
precondition 145
predefined actions 91
Predicate/Transition Nets 225
predicates 198
problem-solving knowledge 353
problem classification 261
problem domain reference model 274
problem model taxonomy 258
problem solving methods 266
problem taxonomy (PT) 255, 257, 260, 261
process modeling 219
process models 357

process oriented view on ontologies (POVOO) 351
process submodel 130, 145
PROMPT 367
properties 8, 9
properties, defining 24
propositional contents 82
Protégé 3.2 class 30
Protégé 3.2 property individuals 31
Protégé ontology editing tool 14
Protégé ontology editor framework 357
pseudocode for new vector generation 357
PSIM Ontology 44
purchase order 225
Puzzle 367, 371

Q

QoS-aware service selection 369
QoS classifications 284
qualities 24
quality of service (QoS) 369

R

r-actions 91
RACD role modeling 302
ranges 9
RDF (resource description framework) 13, 237, 241, 334
RDF-schema 11
RDF/XML 226
RDF Schema 241, 334
RDF view language (RVL) 354
RDQL (RDF query language) 357
REA enterprise ontology 37
real-world ontologies 379
reasonable enterprise 49
reasonable entities 52
reasoning engines 13
reciprocal value transaction 316
reference ontology 341
referent tracking (RT) 35, 41
referent tracking (RT), paradigm 41
referent tracking database (RTDB) 42
referent tracking system (RTS) 42
referent tracking system (RTS), services of 42
relationships 217
relevance 150
relocate function 370
representational units 40
requirements engineering (RE) 122, 189
requirements engineering (RE) effort 123
resource 108, 149
resource concept 149
resource description framework (RDF) 11, 224
resource discovery 176
resource view 190
return on investment (ROI) 164
Index

role-driven modeling 127
role activity and communication diagram (RACD) 302
roles 109
S
S-Match 367, 368
sales order process (SOP) 60
sales order process CODeP-based description 63
sales order process possible workflow 62
sales order use case 61
SC-ISS reference model 254
schema-based ontology-merging algorithm 370
SC information support reference model 260
secure socio-technical systems 188
SecureUML 192
security 188
security engineering 190
self-organization 328
semantic-based formal framework (ADP) 294
semantic analyses for business transformation 243
semantic brokers 5
semantic business process models 223, 225, 227
semantic data interoperability 5
semantic enrichment 351
semantic interoperability 5
semantic interoperability community of practice (SiCoP)
semantic level 2, 355
semantic map 3
semantic markup languages 241
semantic markup of business process models 224
semantic markup of existing data 18
semantic metadata 227
semantic model for business transformation 242
semantic models 237
semantic models for business transformation 241
semantic reference model 278
semantics 1
semantics, harnessing 2
semantic service platform 289
semantic services 5
semantic similarity 368
semantic technologies 1, 2, 6, 295
semantic technologies, and the semantic Web 15
semantic technologies, applications 5
semantic technologies, benefits 5
semantic technologies, case study 7
semantic technologies, challenges 18
semantic technologies, issues 18
semantic technologies, key strategies 3
semantic technologies, overview 1
semantic technologies overview 3
semantic toolkit 249
semantic Web (SW) 15, 190, 295, 333, 368, 391
semantic Web “layer cake” 16
semantic Web components 18
semantic Web ontology 354
semantic Web ontology language (OWL) 8
semantic Web services 6, 353
semantic Web services modeling 22
semantic Web services support 54
semantic Web technology stack 339
SemPeT 232
SemPeT, graphical user interface of 233
sequence 62
service-orientation 328
service-oriented information-logistical platform 278
service level agreements (SLA) 161
service matching 286
service ontology 283, 285
service query and manipulation language (SWSQL) 369
service retrieval 284
service roaming 286
service set changes 285
service subsystem 288
situation detection 286
situation ontology 285
situations 55
smart organization ontology 338
SM lifecycle 176
SnoBase driver 247
SnoBase ontology management system 238, 245, 246
SnoBase ontology management system architecture 246
SnoBase system 245
SOA (service oriented architecture) 328
social action 75
social dependency 51
social grounds 76, 81
social interaction 77
social model 191
social purposes 76
social relation 78
social roles 94
social rules 104
social world 75
socio-instrumental action 76
socio-instrumental pragmatism (SIP) 70, 72, 75, 88
socio-technical system analysis 189
sociotechnical entity 102
<table>
<thead>
<tr>
<th>Term</th>
<th>Page References</th>
</tr>
</thead>
<tbody>
<tr>
<td>softgoal</td>
<td>142</td>
</tr>
<tr>
<td>soft systems methodology (SSM)</td>
<td>208, 212</td>
</tr>
<tr>
<td>software-engineering-driven techniques</td>
<td>53</td>
</tr>
<tr>
<td>software agent</td>
<td>131</td>
</tr>
<tr>
<td>software assets</td>
<td>160</td>
</tr>
<tr>
<td>software development environments (SDE)</td>
<td>53</td>
</tr>
<tr>
<td>sourcing agreement</td>
<td>315, 316</td>
</tr>
<tr>
<td>SPARQL</td>
<td>361</td>
</tr>
<tr>
<td>SPARQL query</td>
<td>248</td>
</tr>
<tr>
<td>SPARQL query language</td>
<td>246</td>
</tr>
<tr>
<td>SPARQL query language for RDF</td>
<td>247</td>
</tr>
<tr>
<td>specialized domain ontologies</td>
<td>356</td>
</tr>
<tr>
<td>species</td>
<td>23</td>
</tr>
<tr>
<td>specific differentiation principle</td>
<td>23</td>
</tr>
<tr>
<td>stakeholder theory</td>
<td>161</td>
</tr>
<tr>
<td>stakeholder theory and ICT management</td>
<td>161</td>
</tr>
<tr>
<td>standard ontology languages</td>
<td>238</td>
</tr>
<tr>
<td>standards setting</td>
<td>315</td>
</tr>
<tr>
<td>Stanford Medical Informatics</td>
<td>14</td>
</tr>
<tr>
<td>statistically-based cluster analysis</td>
<td>23</td>
</tr>
<tr>
<td>strategic partnerships</td>
<td>311, 314</td>
</tr>
<tr>
<td>structural memory (SM)</td>
<td>171, 174</td>
</tr>
<tr>
<td>structure</td>
<td>103</td>
</tr>
<tr>
<td>structure, mechanisms, and policies (SMP)</td>
<td>53</td>
</tr>
<tr>
<td>subtyping</td>
<td>44</td>
</tr>
<tr>
<td>supply chain (SC)</td>
<td>254</td>
</tr>
<tr>
<td>supply chain challenges</td>
<td>259</td>
</tr>
<tr>
<td>supply chain collaboration</td>
<td>265</td>
</tr>
<tr>
<td>supply chain information system support</td>
<td>265</td>
</tr>
<tr>
<td>supply chain management (SCM)</td>
<td>254, 255</td>
</tr>
<tr>
<td>supply chain relationship</td>
<td>315</td>
</tr>
<tr>
<td>supply chain system</td>
<td>257</td>
</tr>
<tr>
<td>Sydney OWL Syntax</td>
<td>18</td>
</tr>
<tr>
<td>symmetry</td>
<td>342</td>
</tr>
<tr>
<td>synchro task</td>
<td>60</td>
</tr>
<tr>
<td>syntactic level</td>
<td>355</td>
</tr>
<tr>
<td>system design methodologies</td>
<td>257</td>
</tr>
<tr>
<td>system design process</td>
<td>261</td>
</tr>
<tr>
<td>system processes</td>
<td>255</td>
</tr>
<tr>
<td>system taxonomy (ST)</td>
<td>255, 257, 260</td>
</tr>
<tr>
<td>system taxonomy reference model</td>
<td>273</td>
</tr>
<tr>
<td>tertium non datur principle</td>
<td>25</td>
</tr>
<tr>
<td>test ontologies</td>
<td>379</td>
</tr>
<tr>
<td>theory of behavioral integration</td>
<td>162</td>
</tr>
<tr>
<td>theory of behavioral integration and ICT management</td>
<td>163</td>
</tr>
<tr>
<td>theory of fit</td>
<td>162</td>
</tr>
<tr>
<td>theory of fit and ICT management</td>
<td>162</td>
</tr>
<tr>
<td>theory of images of organization</td>
<td>164</td>
</tr>
<tr>
<td>theory of images of organization and ICT management</td>
<td>165</td>
</tr>
<tr>
<td>theory of knowledge</td>
<td>23</td>
</tr>
<tr>
<td>time ontology</td>
<td>283</td>
</tr>
<tr>
<td>top-level procedure</td>
<td>370</td>
</tr>
<tr>
<td>Top Management Team (TMT) level</td>
<td>163</td>
</tr>
<tr>
<td>total cost of ownership (TCO)</td>
<td>164</td>
</tr>
<tr>
<td>tourism</td>
<td>280</td>
</tr>
<tr>
<td>TOVE ontology</td>
<td>106</td>
</tr>
<tr>
<td>TOVE project</td>
<td>37, 106, 125</td>
</tr>
<tr>
<td>transactional systems</td>
<td>210</td>
</tr>
<tr>
<td>transaction cost theory</td>
<td>164</td>
</tr>
<tr>
<td>transaction cost theory and ICT management</td>
<td>164</td>
</tr>
<tr>
<td>transparency</td>
<td>51</td>
</tr>
<tr>
<td>Tropos methodology</td>
<td>191</td>
</tr>
<tr>
<td>trust of execution</td>
<td>198</td>
</tr>
<tr>
<td>trust of permission</td>
<td>198</td>
</tr>
<tr>
<td>trust propagation</td>
<td>200</td>
</tr>
<tr>
<td>trustum</td>
<td>197</td>
</tr>
<tr>
<td>type predicates</td>
<td>198</td>
</tr>
<tr>
<td>U</td>
<td></td>
</tr>
<tr>
<td>U.S. DARPA-funded Air Operations Enterprise Modeling (AOEM)</td>
<td>302</td>
</tr>
<tr>
<td>U.S. Federal Government</td>
<td>7</td>
</tr>
<tr>
<td>U.S. Federal Government, case study</td>
<td>7</td>
</tr>
<tr>
<td>U.S. Office of Management and Budget (OMB)</td>
<td>7</td>
</tr>
<tr>
<td>ubiquitous computing</td>
<td>279</td>
</tr>
<tr>
<td>UDDI</td>
<td>22</td>
</tr>
<tr>
<td>UML class diagrams</td>
<td>88, 208</td>
</tr>
<tr>
<td>UML diagram</td>
<td>217</td>
</tr>
<tr>
<td>UML generalizations</td>
<td>55</td>
</tr>
<tr>
<td>UML interface notation</td>
<td>176</td>
</tr>
<tr>
<td>unified foundational ontology (UFO)</td>
<td>54</td>
</tr>
<tr>
<td>unified KoC/SOP ontology</td>
<td>65</td>
</tr>
<tr>
<td>unified model</td>
<td>65</td>
</tr>
<tr>
<td>unified modeling language (UML)</td>
<td>15, 53, 250</td>
</tr>
<tr>
<td>unique resource identifiers (URIs)</td>
<td>4</td>
</tr>
<tr>
<td>universal description discovery and integration (UDDI)</td>
<td>6</td>
</tr>
<tr>
<td>universal modeling language</td>
<td>240</td>
</tr>
<tr>
<td>universals</td>
<td>39</td>
</tr>
<tr>
<td>Université de Savoie machining ontology</td>
<td>27</td>
</tr>
<tr>
<td>upper ontology</td>
<td>281</td>
</tr>
<tr>
<td>use concepts</td>
<td>55</td>
</tr>
<tr>
<td>user profile changes</td>
<td>285</td>
</tr>
<tr>
<td>user profile ontology</td>
<td>283</td>
</tr>
<tr>
<td>user subsystem</td>
<td>289</td>
</tr>
</tbody>
</table>
Index

V

value activity 313
value interface 313
value object 313
value port 313
value structure of a joint venture 316
value transaction 313
value transfer 313
VIOLA 241
VIOLA, business map views 243
VIOLA semantic model 243
VIOLA system 242
virtual conceptual structure 12
virtual enterprises 327
virtual inter-organizational business process 361
virtuality 338
virtual learning 392
virtual structures 12

W

W3C-endorsed recommendations 16
Web ontology language (OWL) 21, 22, 223, 224, 226, 335
Web ontology language service specification (OWL-S) 6
Web service modeling ontology (WSMO) 54, 285
Web services 22
Web services description language (WSDL) 6
Web services modeling ontology (WSMO) 22
Web services protocol stack 22
weight learning through artificial neural networks 371
well-known Petri Nets 353
work duplication 208
workflow engine 304
workflow management systems (WFMS) 353
workflow ontology 62
workflow patterns 53, 62
work practice 211
worldwide digital data 2
World Wide Web 1, 6
World Wide Web Consortium (W3C) 7, 16, 18, 226

X

XML 241
XML-based notations 18
XML metadata interchange (XMI) language 250
XML schema 241