

Index

- acceleration speed of car, high, Shenzhen 196
- Accessible and Personalised Local Authority Website System (APLAWS) 220–21
- acquisition guidance, agency-level 153
- acquisition officers in federal agencies,
 - innovative procurement practices 159
 - White House Office of Federal Procurement Policy (OFPP)
- acquisition rules, FAR policy (US) 152
- Acquisitions Offices 153
- adaptive procurement capability 71–2
- ADS-B *see* Automatic Dependent Surveillance-Broadcast
- advanced innovative learning results 271, 279
- aerospace industries 163–4
- Aho Group Report, 2006 1–2
- air traffic control, satellite-based system 163–4
- Aker company, Norway 276
- American Community Survey 163
- American Recovery and Reinvestment Act, 2009 157–8
- Audit Commission 41
- Automatic Dependent Surveillance-Broadcast (ADS-B) program
 - aircraft identification 163–8
 - increased airspace capacity and efficiency 167
 - services contract 164–5
- award criteria 121
 - carbon footprint, total cost of ownership 134
- awareness-raising campaigns 104
- AWIPS, data gathering by radar 173
- barriers, artificial creation for new entrants 79
- barriers, significance of 55
- barriers to innovation procurement
 - too much weight to price rather than quality 54
- base registries, sources of information 213
- bat swarms, mobile storm-chasing radars 173
- battery configuration 192
- bed washing innovation
 - Erasmus University Medical Centre (Erasmus MC), the Netherlands 124
- Beijing
 - target of 5000 NEVs by end of 2015 185
- biodegradable sensors, NOAA 169
- BOSI *see* Brazilian Oil Supply Industry
- boundary layer turbulence, Hydro-Radar 173
- bounded rationality
 - incomplete information conditions 122
 - proposition of TCE 122
 - rational decision-making 122
- BrasFELS shipyard, hull fabrication 282
- Brazil, Petrobras company, case study data 264
- Brazilian oil and gas supply, P.51 construction 265–6
- Brazilian Oil Supply Industry (BOSI) 264
 - innovative technological learning 273
 - technological gap information 288–9
- Brazilian Prime Vendor 288

- Brazilian state companies 264
 - Electrobras, Siderbras, Telebras 265
- Brazilian state intervention in economic affairs 273
- Broadcast Services Ground System (BSGS) 165
- building capability
 - public procurement for innovation (PPI) 65–83
- Business, Innovation and Skills (BIS), Department 110
- business process management system (BPMS) 222
- buyer-supplier relationships 243
- Buying Solutions 41
- BYD pure electric buses (K9) 199
- BYD pure electric taxis (E6) 199

- cable-controlled underwater recovery vehicle (CURV) 1960s
 - ROV technology 170
- Carbon Compacts 42
- carbon emissions reduction, China 182
- carbon footprint as award criteria 126–7
- carbon reductions 127, 130
- case studies innovation drivers 130
- case studies overview 125, 130
- Catalogues of Recommended Vehicle Models for NEV Demonstration Program, China* 186–7
- Census Bureau 163
 - conducting of US Census, 1980 problems 161–2
 - TIGER System 161–2
- central government, innovation criteria in tenders 53
- Central Union of Greek Municipalities (KEDE), 2007 209–10, 218–30
 - stages of procurement process 219–22
- China
 - macro, national level of policy-making 187
 - medo, regional level of policy articulation 187
 - micro level of policy implementation 187
 - China Putian group 200
 - China Southern Power Grid Co. Ltd research on existing standards 200
 - Chinese Law on Government Procurement 180
 - Chinese new energy vehicles programme 300–301
 - case studies 20
 - PPI 179–205
 - Cimarron Doppler radar 173
 - citizen expectations of service quality 66
 - city-level public procurement activities, China 201
 - clean air, water, natural resources concerns
 - in research and innovation 154
 - Clean Air and Clean Water Acts 154
 - climate change 70, 111
 - closed-loop paper model case study data 244– 53
 - delivered by Banner 251
 - procurement process 249–53
 - production at paper mill 251
 - with zero waste 251
 - cloud computing system creation 159
 - Cockpit Based Merging and Spacing 167
 - Code of Federal Regulations 154
 - collaboration in PPI 9
 - commercialization of innovations 3
 - commercialization of NEV technology, China 182
 - communication and interaction in China 201–3
 - Community Support Framework 215
 - Company A, China, hybrid coaches 190–92
 - competition, full and open, FAR policy (US) 151
 - competitive dialogue 52–3, 121
 - competitive processes 148
 - complex performance procurement 66–7
 - Computer Aided Telephone Interviewing (CATI) 42
 - computer systems
 - petaflop capability 171–2
 - teraflops capability 171

- confidentiality and investment, suppliers' concerns 134
- conflict between policy objectives 38
- conflicting goals of principals and agents 122
- construction and assembly of metal structures 284
- construction of semi-submersible platform in Brazil
 - low-innovative PPI strategy of Petrobras 292
- Continuous Descent Arrival (CDA) 167
- contract, size and duration of 56
- contract awarding 16, 82, 229
- contracting, in federal public procurement 176
- contracting out service production 65
- Contracts and Acquisitions Management group of Department of Education 158
- contractual arrangements, complex 75
- copier paper, low-risk item 244–5
- copier paper recycling, for UK government 235
- Corporate Register of Goods and Services Suppliers 288
- corporate social responsibility 238
- cost efficiency, innate principle, FAR policy (US) 151–2
- cost-efficiency in US 174–5
- cost estimating 101
- cost issue as barrier 54
- cost rationalization 15, 148–9
- cost sharing 104
- cross-border service 228
- cross-case analysis issues, Jinan and Shenzhen 202
- cultural differences, contextual risk 91
- curriculum development 82
- customer information need 114
- customer risks in PPI 112–13
- customers, private and public 56
- damage to environment, minimization 238
- dashboard redesign of car, Shenzhen 196
- data exchange and management layer
 - secure exchange, security requirements 213–14
- Decennial Census, USA 163
- decision-making in PPI 88
- decision-making power, procurement manager, US 153
- deck mating operation, P-51 283
- deep-sea rescue operation
 - cable-controlled underwater recovery vehicle (CURV), 1960s 170
- defence expenditure, high in Greece 215
- defence sector 11
- deforestation, growing impact 236
- demand aggregation, informal approach 136
- demand and supply, risk sources 91
- demand-based innovation policies 17–18, 35
 - PPI as crucial instrument 228
- demand-side
 - activities, public procurement for innovation 1–2, 4–5
 - market risks 100
 - measures 18, 38–9
 - policies 88
 - policy instruments 29–31
- demographic structure of population, changing 70
- Department for Business, Innovation and Skills (BIS)
 - FCP method steps 117
- Department of Defense, US 157
- Department of Education 154
- Department of Energy Acquisition Regulations (DEAR)
 - incorporation of FAR rules 155
- Department of Energy (DoE), US 154–5
- Department of Health 130
- Department of Health and Human Services (DHHS) 154
 - public funder of research, US 157
- Department of Interior (DoI). public infrastructure 154, 157
- design uniqueness, challenge of 75

- developing countries
 - learning process 264
 - stages of foreign technology learning 269
- developmental procurement capability 71–2
- diffusion process preconditions, essential function 75
- Digital Agenda for Europe 231
 - European Commission, 2010 212
- digital database 162
- digitalization of government activities 65–6
- digital sign processing hearing aids in NHS 242
- digital skills lack, Greek employees 218
- digital spatial database, map data 162
- Directgov 41
 - now Gov.UK website 61
- disadvantaged groups, assistance to 148
- domestic industry development 266
- domestic shipbuilders, absence of in Petrobras's platform projects 291
- Doppler radar 172–3
- Dual Independent Map Encoding (DIME)
 - geographic information system for spatial data 161
- dual polarization radars 172–3
- duplicate production, China 20

- e-auction, e-tendering 53–4
- economic development of disadvantaged groups 69
- economic impacts of PPI 66
- economic judgement for assessment 16
- economic zones, special, Deng Xiaoping 204
- ecosystems, residential 101
- Efficiency and Reform Group (ERG) 41
- Efficiency Review, Sir Philip Green (2010) 240
- e-government and public services 210–12
 - Europe 211–15
 - Greek case 217–18, 302–3
 - e-government interoperability, significant benefits 214
 - electric cars, 'government renting', China 195
 - electric coach model, BYD 198
 - electricity generators 280
 - electric vehicle (EV) manufacturers in Jinan
 - low-speed vehicles for rural areas 189
 - employment and promotion of small businesses 69
 - end-users' involvement, limited, LGAF project 8, 224
 - energy 155–6
 - and water supply 111
 - conservation 148
 - efficiency, federal procurement (US) 151
 - efficient norms for buildings 70
 - independence and development 155
 - plants, alternative 101
 - Energy Policy Act 154
 - Energy-saving and New Energy Vehicles Demonstration, Promotion and Application Program (NEV program) 184
 - energy sector 11
 - energy technologies, alternative, US 155
 - engineering as main evaluation method
 - FAR policy (US) 152
 - environment 69, 148, 153–5
 - environment-friendliness, federal procurement (US) 151
 - Environmental Innovations Advisory Group (EIAG) 113–15
 - forward commitment procurement (FCP) 116
 - 'mountain of risk' design 115
 - environmentally sensitive areas transport, energy, food, paper 238
 - environmental modelling program (EMP). NOAA 171
 - Environmental Protection Agency (EPA) 153–4
 - Office of Acquisition Management 154

- EPA Acquisition Regulations (EPAAR) 154
- EPC contractors learning experience in P-51 project 281
- EPC (engineering, procurement, contracting) 291, 293
- Erasmus University Medical Centre (Erasmus MC) the Netherlands 125
 - bed cleaning facility procurement strategy 126–7
 - bed washing innovation 124–7
 - market engagement 125–6
 - competitive dialogue and procurement procedure 134
 - initial ideas rather than detailed proposals 134
 - market meeting day 126, 133
 - market sounding steps 132
- e-tenders 53
- EU Cohesion Policy Fund, pilot project targets 219–20
- EU-national projects, co-funded 216
- European Commission reports
 - e-government Benchmark Report, 2013 212
 - Risk Management in the Procurement of Innovation 92
- European Directives on procurement processes 15–16
 - proposed changes 14
 - water, energy, transport, postal services sectors 14
- European Interoperability Framework 221, 231
 - conceptual model for public services 213
- European Investment Bank 102
- European Parliament, 2014
 - new directives on public procurement 9
- European single market 214
- European Union and PPI 88
- evidence data for closed-loop model case
 - in-depth interviews with stakeholders 244–5
 - interviews with key individuals 244
 - site visits 244
- expenditure of UK public bodies, on procurement 237
- export opportunities 37
- FAA *see* Federal Aviation Administration 164–5
- FAA Life cycle management process for ADS-B 168
- failure causes and consequences 97–8
- failure risk 111–12
- failure tolerance pluralist political systems 15
- FCP *see* forward commitment procurement (FCP)
- Federal Acquisition Regulation (FAR) 153, 174
 - acquisition mechanisms, non-defense federal agencies 153–9
 - cost-effectiveness, open competition requirements 153
 - in US 14, 20
- federal agencies
 - Departments of Education, Energy, Health and Human Services 149
 - differences in federal public procurement 176
 - Environment Protection Agency, Department of Interior 149
- Federal Aviation Administration (FAA)
 - Automatic Dependent-Broadcast (ADS-B) program 163–8
- federal Department of Education (DoEd) 158
- federal funding for education 158
- federal government of US
 - world's largest purchaser of goods and services 150
- federal procurement 149–51
- federal public procurement in US 174
- FEED and detail engineering 280
- financial crises 111
- financial institutions, public, German KfW 102
- financial management tightening, discouragement of innovation 149
- financial risks 93, 102

- firm sizes
 - by area of government 45
 - by procurement category 45
- fish and wildlife, Department of Interior (Dol) 157
- flare bloom projects 283
- flexible corrective action 104
- flight information, important 166
- focus groups for innovations, for need articulation 12
- foreign technology licensing 286
- forensic detail practices 58
- formal bids by potential suppliers 15
- forward commitment procurement (FCP) 19–20, 42, 114–21, 301
 - actions, assessment of individual 135
 - advance information of future needs 116
 - cost savings and competitive processes 151, 174
 - decrease of client's uncertainty 137
 - demonstration project 116
 - development of strategy 118
 - effect on perceived risks in PPI projects 110–40
 - engagement, identification phase 117–18
 - overall effect of application 137–8
 - pilot projects 110
 - procedural rules 150–51
 - process for healthcare organizations 139–40
 - sections of relevance to PPI 151–2
 - theoretical framework 123–4
 - fossil fuels, hydraulic fracturing (fracking) 176
 - framework agreements, professional services 53
 - framework contracts 52–3
 - FSTP Consortium, EPC contractor, Brazil 282–3, 294
 - full life-cycle costing 52
 - function definition 13
 - functional requirements
 - performance-based, outcome-based, value-driven 76–7
 - translation into technical specifications 14
 - General Services Administration (GSA)
 - and Federal Acquisition Regulation (FAR) 151
 - geographic database, US 162
 - geographic information system (GIS) technology 163
 - geographic support of census
 - geographic reference files, maps 161
 - Geography Division: Topologically Integrated Geographic Encoding and Reference System (TIGER)
 - geographic database 162
 - German paper mill 258
 - Global Positioning System (GPS)
 - satellite navigation 163–4
 - global socio-economic challenges 66
 - goods, socially desirable, subsidies for private buyers 204
 - government demand, and innovation 49
 - government efficiency, UK 41
 - government entities, procurement by
 - leading role in domestic industries 290
 - government expenditure in GDP 147
 - government initiative, UK, paper waste recovery 235–6
 - government procurement, China 180
 - government procurement for developing countries, typology 272
 - government procurement policy
 - 266–7
 - and domestic industry 263
 - government's market power 74
 - GPS signals, ADS-B 166
 - Greece, political hostilities, unfavourable for trust 215
 - Greek firm without technical competence 229
 - Greek information technology industry 216–17
 - Greek local authorities, e-government services 21
 - green themes demonstration 52, 201
 - ground radar and ADS-B systems, comparison 168

- Ground Radar-Based System
 - comparison of cost with ADS-B 166–7
- Health and Human Services
 - Acquisition Regulation (HHSAR) 150–51, 157
- healthcare requirements, commonality across Europe 136–7
- high-performance computing (HPC)
 - NOAA environmental modeling program 171
- HM Prison Service landfill of foam mattresses, annual 116
- HM Revenue and Customs (HMRC)
 - closed-loop concept with Banner 250
 - commercial spending 243
 - copier paper, 100 % recycled content 252
 - data loss incident Poynter Review 249
 - data security, critical issue 253
 - internal audit 249
 - loss of discs in transit 243–4
 - low priority on information security 244
 - procurement of copier paper 248
 - procurement of waste management services 248
 - recycling and sustainable development 249
 - relationship with Banner, paper supplier 254–5
 - results of closed loop system 254
 - significant user of paper 245
- HM Treasury 41, 242
- Horizon 2020 programme, European Commission, 2013 237
- horizontal alignment, between sector agencies 81
- House of Lords Science and Technology Committee, 2011 42
- hull block construction 280, 284
- human resources lack for PPI
 - practices in ICT Greece 217–18
- hybrid coaches 190–92
- hybrid vehicles (NEVs) 182
- ICT *see* information and communication technology
 - identification of (social or agency) needs 10–12
 - identification phase 131
 - for successful market engagement 138
 - impact of not innovating, risks 112
 - industrial boilers 288
 - industry inclusion in decision-making
 - in federal public procurement 176
 - information and communication technology (ICTs) 44, 210–12, 277
 - procurement in Greece 215–17, 230
 - information asymmetry 113, 122
 - infrastructure 102, 157–8
 - innovation
 - acceptance among users 80
 - activities, variety, service or process innovations 46
 - awareness, in federal public procurement 176
 - characteristics risks and remedies related to 100–101
 - commitment to 59
 - concept assessment of technical change in developing countries 264
 - criterion in procurement 158
 - different types of 46
 - environment, in energy sources, construction material, cleaning supplies 154
 - fostering, PPI efficiency 161, 267
 - generation process 69–70
 - ideas from supplier firms, processing 73
 - linear model's policy 3–4
 - piloting and testing 77–9
 - policy, PPI as effective tool 88
 - procurement 70–71
 - main barriers to 54–7
 - public demand for incentivization of industry 37
 - public procurement in the United States 147–78
 - public procurement, range of barriers 6, 57
 - public sector, effects 50

- research, for energy sector, US 156
- restraints and barriers 38
- successful delivery 139
 - by suppliers, encouragement 241
- systems, key activities 28
- Innovation for Sustainability Programme 110
- innovation-friendly public procurement 7–8, 54
- innovation in the United States 147–78
- innovation procurement plans (IPPs) 42
- innovations
 - material goods or intangible services 3
 - new creations by firms 3
- innovation source
 - public procurement for innovation (PPI) 47–8
- innovations, radical, R&D funding 49
- innovative learning, low, factors involved 279
- Innovative Technology Adoption Programme (iTAPP) 42
- Instituto Brasileiro de Geografia e Estatística (IBGE)
 - national statistics bureau, Brazil 280, 284
- integration issues 65–6
- intellectual property rights (IPR) 38, 75–6, 191
- intellectual property rights (IPR) provisions, innovation fostering 52
- interaction and exchange, developing trust 242
- interaction with suppliers, capability 73
- Interior Department Acquisition Regulations (IDAR) 157
- intermediate-innovative learning, factors involved 279
- intermediate learning
 - platform engineering design, equipment fabrication 286
- International Cartographic Conference, 1984
 - nationwide geographic database, US 162
- international collaboration projects 74
- inter-regional competition, China 203–4
- intra-organizational levels 81
- invention of ‘closed-loop paper’ model 244
- Investing in Innovation, grant program 158
- investing incentive 56
- investment needs 70–71
- investment promotion in new products 116
- investments in innovation by risk sharing 80, 113–14
- ITT Corporation, contract award to 166
- Jinan, China
 - procurement of hybrid coaches for National Games, 2009 188
- Jinan city, avoidance of risky commitments 193–4
- Jinan Public Transport Group 192
- KEDE *see* Central Union of Greek Municipalities
- KeppelFELS shipyard 282
- knowledge inputs (research) 3
- knowledge-intensive entrepreneurship opportunities 227
- Laboratory of Industrial and Energy Economics (LIEE)
 - National Technical University of Athens (NTUA) 231
- land management, Department of Interior (DoI) 157
- large-scale projects 268
- lawmaking
 - regulatory standards for environmental practices 154
- LCB-Healthcare pilot projects 116, 124, 130
 - FCP method: engagement 131
- Lead Market Initiative 88–9
- lead markets
 - closed loop potential 252–3
 - creation of 49–50, 88

- in NEVs, China 204–5
 - new products 74
 - research guarantees 104
 - in a sustainable innovation 237–8
- learning between subcontractors 280–81
- learning by design 271, 283
- learning by doing 291
 - fabrication of process modules 283
- learning experiences, typology of various
 - in developing countries 272
- learning, interactive, between organizations
 - for innovations 12
- learning mechanisms, formal and informal 82
- learning modes by developing-country firms
 - low, intermediate, advanced 270–71
- LED display system in bus, China 199–200
- Leopoldo Américo Miguez de Mello Research and Development Center (CENPES) 275
- LGAF *see* Local Government Application Framework
- licensing of technologies 289
- life cycle analysis (LCA) 238
- life-cycle costing, as assessment criterion 14
- linear view of innovation policy 5
- litigation, extensive
 - in federal public procurement 175
- Local Authority Websites National Project 220
- Local Government Application Framework (LGAF)
 - character of 226–7
 - long-term potential 227–8
 - main actors 223
 - obstacles to success 224
 - path dependency as impediment 225
 - pilot project of Central Union of Greek Municipalities 21, 209–10, 218–26
 - platform 230
 - delivery to KEDE, 2011 222
 - used by Greek municipalities 228
 - redesign of 225–6
 - significant side-effect 227
- local government contract clients 44
- local service delivery 70
- Lockheed Martin, ADS-B 164
- Low Carbon Building (LCB), Healthcare Network 110
- low-innovative learning by doing, activities 286
- low-speed EVs, lead-acid batteries 189
- main sources for innovation 47
- management accountability, lack of HM Revenue and Customs (HMRC) 244
- managerial skills
 - for functional requirement development 77–9
- manufacturer BYD, Shenzhen 194–5
- market consolidation by PPI 148
- market demand risks, assessments 101, 120
- market engagement phase of FCP 131, 133–4
 - aligning procurement strategy 121
 - communication 119
 - consultation, personal 132–3
 - facilitating networking 120–21
 - identification of actions 119
 - market sounding 119–20
 - requirement refining 120
 - Rotherham NHS Foundation Trust (UK) 127–8
 - signposting demand 120
- market escalation by PPI 148
- market intelligence lack, policy need 60
- market knowledge, lack of 59
- market novelty, definition 39
- market power of government buyers 73–4
- market risks, demand and supply sides 93
- market sounding prospectus (MSP)
 - direct emails, telephone calls, articles in trade journals 132–3

- Rotherham NHS Foundation Trust (UK) 127
- metal structures for the power generation 280
- meteorology 172
- military equipment procurement in Greece 215
- military requirements 268
- Ministry of Finance (MOF) 179
- Ministry of Industry and Information Technology (MIIT), China 184–5
- Ministry of Science and Technology (MOST) China 179, 182
- mobile sensor platforms, NOAA 169
- model-based analysis techniques, NOAA 169
- monitoring of PPI 16–17
- ‘mountain of risk’ 115
- multidisciplinary teams, use of 103
- multiple sourcing, one contractor 16
- multiple stakeholder objectives, possible contradictions 69

- National Aeronautics and Space Administration (NASA) 160
- National Airspace System Wide Acquisition Program Advance Notification to Industry, 2006
 - quote on performance specification 165–6
- National Audit Office (NAO) 238–9, 243–4
 - on lack of data availability for procurement 242
 - public spending monitoring 41
- national defense and security areas, US 148
- national demonstration programs, China
 - lead market initiatives (LMI) 180
 - type measures 180
- National Development and Reform Commission (NDRC), China 184
- National Games of China, 2009
 - host city, Jinan, public transport 189
- National Health Service (NHS) 41, 44–5
 - difficulties in innovation 49
- National Institute of Health (NIH)
 - public funder of research, US 157, 160
- National Medium- and Long-Term Program for Science and Technology Development (2006–2020) (MLP) 179
- National Oceanic and Atmospheric Administration (NOAA)
 - definition of activities 169
 - high performance computing 169–73
 - remotely operated vehicles 169–73
 - scientific agency in US Department of Commerce 169
- National Ocean Service (NOS)
 - safety of ocean and coastal areas 170
 - telecommunications and information technology 171–2
- national policies for innovation procurement, China 181
- national policy arenas 70
- national problems, versus local problems 70
- National Weather Service, NOAA
 - reliance on radar 172
- needs, future and unmet, lack of clarity 112
- needs ‘translation’ into functional requirements 12–13
- Netherlands, academic hospital, pilot project 124
- Netherlands Organization for Applied Scientific Research (TNO)
 - project support, facilitation, know-how 130
- networking, facilitating of, supply chain interaction 137
- NEV *see* New Energy Vehicles
- NEV-related innovation policies in China 183
 - development in China 182–7
- New Energy Vehicles (NEV)
 - demonstration program 184–5
 - procurement of 100 hybrid buses 189–92
 - demonstration program in China 182–7
 - ‘fever’ 203

- manufacturers in Shengzhen, BYD and Wuzhoulong 194
 - 'green technology' 197
 - program design 186
 - standardization 200
 - procurement for Universiade 2011
 - process 196–201
- new product development 137
- new technology, dissemination of 88
- Next Generation Air Transportation System (NextGen)
 - satellite-based system 163
- NIH *see* National Institute of Health
- NOAA *see* National Oceanic and Atmospheric Administration
 - computer capability 171–2
 - scientific productivity enhancement 171–2
- non-departmental public bodies (NDPB) 41
- Nordic countries, radical innovations in past 105
- Nottingham University Hospitals
 - NHS Trust (UK) 125
 - coal-fired boiler, end 128
 - energy solution, distributed 129–30
 - integrated ultra-low carbon energy solution 128–30
 - market engagement process 129, 133, 136
- novel products, need for expected performance testing 77
- nuclear power industry US, failure in PPI 267
- Nuovo Pignone, sales office in Brazil 280

- Obama, Barak, President of USA, major health reform 156
- object recovery from ocean floor
 - cable-controlled underwater recovery vehicle (CURV) 1960s 170
- ocean energy management
 - Department of Interior (DoI) 157
- ocean-surface characteristics, Hydro-Radar 173
- Office of Acquisition of Property Management (APM) 157
- Office of Federal Procurement Policy (OFPP) 152
 - White House 175
- Office of Government Commerce (OGC) 2004
 - 'capturing innovation' 38
- Office of Grants and Acquisition Policy and Accountability US 157
- Office of Innovation and Improvement 158–9
- Office of Management and Budget (OMB) at White House 151–2
- Office of Chief Information Officer (OCIO)
 - NOAA program and IT 171
- Office of Government Commerce (OGC) 41
- office paper supplies, collaboration in 246
- Official Journal of the European Union (OJEU)* 127
- oil and gas industry, US, ROV technology 170–71
- oil platforms
 - construction and assembly 279
 - engineering design 279
 - fabrication of equipment 279
 - functions 277
 - supply of services 279
- oil refineries, Gabriel Passos, Alberto Pasqualini 273
- oil savings rate of hybrid buses and cars 185, 192
- oligopoly 79
- open source software (OSS) 219–20
- opportunism 122
 - proposition of transaction cost economics (TCE) 122
- Organisation for Economic Co-operation and Development (OECD) 147
 - public procurement for innovation (PPI) 35–61
- organizational benchmarking 82
- organizational capability, definition 67
- organizational risk 93, 103
- organizational routines, repetitive 67–8
 - development of the platform 227–8

- outcome specifications 52
 - in social services, professional services 54
- outsourcing service production 65
- overspecification of requirements, peril 159
 - in federal public procurement 175–6
- P-51 new procurement policy of Petrobras 274
- P-51 platform 274–90
- P-51 semi submersible platform, 2009
 - bidding process for oil platform 276
 - contracts with EPC contractors 276–7
 - leadership UN Rio 275
 - offshore Rio de Janeiro state 274–5
- P-51 subcontractors covered by field survey 282, 285
- paper products buyer, and paper waste supplier 245
- paper purchasing supply chain, typical 246
- paper, recycled, lower price 252
- paper recycling, economic and environmental benefits 236
- paper shredding company 251
- paper supply chain, from forest, or paper mill 245
- paper waste, confidential, traceability and accountability 252
- paper waste disposal 245, 247
- paper waste generating, in UK public sector 236
- partnership approach to public procurement
 - barriers to 78, 243
- payment services by financial institutions 213
- people, lack of well-trained
 - in federal public procurement 176
- performance requirement for NEV in Universiade
 - set by Shenzhen government 197–8
- personal data, loss of
 - HM Revenue and Customs (HMRC) 244
- Petrobras, Corporate Register 284
 - state-owned enterprise, Brazil 280, 293
 - Brazilian oil and gas supply 264
 - deepwater oil production 291
 - front end engineering design (FEED) 275–6
 - loss of monopoly 273–4
 - ‘mixed-capital’ corporation 273
 - outsourcing functions 274
 - procurement policy, case of P-51 273–4
- platform engineering design 280
 - fabrication of equipment 279
- policing by EPA 154
- policy implementation, China 204
- policy makers, elected, risk aversion of 81
- policy targets, quantitative 203
- political system interference 17
- PPI *see* public procurement for innovation
- PPOI, challenges and drivers 24043
- precipitation monitoring by radar 172
- pre-commercial procurements (PCP) 5, 9
- pressure vehicles 280
- private demand, insufficient 104
- private finance initiative (PFI)
 - contracts 248
- private firms 11, 44
- private research and development (R&D) leverage of 88
- private sector companies, supply chains 116
- private versus public customers, assessment of 57
- process innovation 48, 147, 201
- procurement cycle 93
- procurement data
 - quality and availability in public sector 242
- procurement effectiveness in
 - fostering innovation 37
- procurement expertise 241
- procurement information, key barriers to 242
- procurement in United States
 - defense, security, social objectives 174

- procurement modes and practices
 - 51–4
 - influence on innovation 51
- procurement of sustainable innovation
 - case of closed-loop paper 243–53, 257
- procurement officers, emphasis on tools or purchase 160–61
- procurement practices, use and meaning of 52–3
- procurement procedures to support innovation 113
- procurement process
 - core design principles 222–3
 - risks and remedies related to 103–5
- procurement process of NEVs for National Games, 2009, China 190
- procurement reform in US 175
- procurement strategies 133–4, 241
- procurer characteristics, assessment 55
- procurer competence 241
- procuring agency, ‘functional procurement’ 13
- product development and final delivery to purchaser 17–18
- product innovation 147
- product-based services 227
- professional services, increased R&D investments 49
- profit impact of products 239
- profit-sharing arrangements 51, 53
- program initiatives, central-level NEV 201
- project and process characteristics, risk management 100
- protectionist safeguards 266
- protectionism, aggravated, China 203
- public bodies, importance as first customers 58
- public buyers, less innovation-friendly 56–7
- Public Contracts (Scotland) Regulations 2006 41
- public demand as trigger for markets 37, 48
- public expenditure on innovation in US 147
- public health 111
 - in US science policy 156
- public organizations 66, 71
- public policy schemes 4, 60
- public-private partnerships 248
- public procurement for e-government
 - in Greece 215–18
- public procurement in environmental area
 - best examples of PPI on US 155
- public procurement and innovation link 47–51
- public procurement for e-government services
 - Greek local authorities 209–32
- public procurement for innovation (PPI) 1, 36–40, 148, 237–8, 266–8, 551
 - catalytic or direct 8
 - consistency with other policies 69
 - definition, innovation promotion 6–7, 148
 - demand-side innovation policy instrument 299–300
 - in developing countries, case of Petrobras 263–94
 - different types 7–8
 - efficiency and effectiveness of money spent 69
 - in field of e-government 209
 - goal setting for 68–70
 - implementation stages 10
 - incremental and radical types 8–9
 - innovation policy, China, 2006 179
 - innovation policy instrument, needs 300, 304–6
 - interactive learning 9
 - intervention in China 14
 - low-innovative 272
 - major barriers 18
 - needful links with R&D 78
 - Petrobras, Brazilian enterprise case study 21–2
 - procedures, supplier unfamiliarity 134
 - processes, need for understanding 59
 - projects, from genuine unmet needs 140

- public confidence in fairness of procedure 69
- purchase of goods, services, by public agency 6–10
- recycled paper for UK government 21
- societal challenges 70
- societal problem-solving 15
 - in the UK 40–42
 - in United States 160–73
 - Census Bureau 149
 - Department of Energy 149
 - energy sector 156
 - Federal Aviation Administration 149
 - matrix in US 150
 - National Oceanic and Atmospheric Administration 149
 - outside defense and national security 148–9
 - state and federal levels 150
- public R&D funding 9–10
- public sector
 - bureaucracies, risk aversion encouragement 112
 - contracts, important source of innovation 50
 - demand 11, 238
 - information systems, Greece, LGAF system 228
 - organizations 42–3, 111
 - potential, sustainability goals through innovation procurement 235
 - role, innovation generation process 46–7
- public service improvement 66
- public services reform UK 41
- public spending categorization 39
- public spending value for money 69
- public technology procurement 2
- public transport companies 191–2
- purchasing portfolio (Kraljic), 1983 239–40
- purchasing power, 159, 240
- purchasing strategy 239–40
- purpose of procurement 103–4
- R&D design risk, reduction methods 101
- R&D, developmental, underinvestment 78, 82, 268
- R&D examples, prototype making, market research 61
- R&D funding 12, 49
- R&D phase 68, 104, 114
- R&D support 147–8
- radar object-detection system, definition 172
- radical innovation concept 91–2, 269
- Raytheon, ADS-B 164
- recycled paper for UK government 257, 302–3
- recycling plants, large 101
- refining requirements, perceived actions 135–6
- refurbishment programme Rotherham NHS Foundation Trust (UK) 127
- regional protectionism, China 20, 180, 193, 203
- regional trade areas, European single market 74
- regulatory complexity 38
- relationship management versus transactional contracting 78–9
- remotely operated vehicles (ROV) 170
- request for offers (RFO) 164
- requirements in functional terms 13
- requirements of procurement practices, writing of success and failure 159
- resource library, Environmental Protection Agency (EPA) 155
- restrictions on item specifications FAR policy (US) 151
- risk and innovation 19
- risk averse behaviour, encouragement 112
- risk aversion 55–6, 59, 87, 89, 303
- risk conceptualizing in PPI 90–94
- risk, contextual, political instability, supply chain changes 89, 91
- risk definitions 90
- risk exposure 15

- risk impact on FCP 121–4
- risk in PPI 92–4
- risk issue, importance of 111
- risk management 19, 89, 123
 - basic functions and principles 94–100
 - reduction of innovation costs 94–5
- risk management
 - conceptualization in PPI 94–105
 - in innovation procurement 66, 80
 - in PPI 87–140
 - lack 56
 - practices in public sector 87
 - tasks 99–100
- risk map in PPI, sources of risk 95–6
- risk of credible buyers and market delivery 131
- risk sharing, through public funding 80
- risk sharing among public sector 11
- risks and uncertainties, perceived on case studies 131
- risks at demonstration of product time
 - before commercial sales 114
- risk-taking
 - different attitudes of principals and agents 122
- Rolls-Royce, Brazil, sales office in Brazil 280
- Rolls-Royce, UK-based company in Brazil 293
- Rotherham NHS Foundation Trust (UK) 125
 - alignment process success 134
 - market consultation workshop 133
 - market engagement 127, 136
 - market sounding steps 132
 - pro-innovation procurement 128
 - ultra efficient lighting for future wards 127–8
 - ward solution 128
- ROV *see* remotely operated vehicles
- Sainsbury, Lord
 - UK Minister for Science and Innovation 115
- satellite-based navigation 163–4
- scale and complexity of PPI 101
- scale, change of supply-side market risks 102
- school performance, innovative techniques for 158
- screening information request (SIR) proposal submission 164
- sedan models, BYD, plug-in hybrid car 198
- selection criteria 121
- semi-submersible platforms 293
- service delivery, innovative products and services 36
- service delivery missions
 - public health, safety, public transportation 68
- service innovation 48
- service platform on business processes 221
- service-oriented architecture (SOA) 221, 226
- service-product combinations 65
- service sector activities 44
- Shandong Government Procurement center 190–91
- Shenzhen
 - charging piles for vehicles 200
 - target of 24000 by end of 2012 185
 - technologically advanced 194
- Shenzhen Bureau of Power Supply 199
- Shenzhen, Pearl River Delta NEVs, procurement for Universiade 2011 194–201
- Shenzhen pilot project, 2008
 - hybrid buses, electric cars in traffic conditions 195–6
- Shenzhen Universiade Centre EV Charging station 199
- signposting wider demand 136
- Small Business Research Initiative (SBRI) 42
- social problems, identification 70–71
- social procedures
 - environmental protection, energy conservation 20
- social purposes
 - development of environmentally friendly products 152
 - development of technologies for disadvantaged groups 152

- improvement of space technologies 152
- linking procurement and innovation 152
- social purposes in US
 - environmental protection, energy conservation 148
- societal risk mitigation, awareness-raising and training 104
- societal risks 93, 100
- socio-economic goals 69
- software development projects, success increase 94
- software providers, small-sized efficient knowledge absorbers 227
- software system (platform), centralized
 - for e-government services 209
- sounding FCP actions 135
 - customers' uncertainty decrease 135
- space technologies 174
- 'special interests', danger of corruption 13
- spillover effects from innovations
 - market expansion 49
 - by public buyers 47–8
- spring storm season 1985, Cimarron Doppler radar 173
- stainless steel, super duplex 282
- Standards of Monitoring System on NECs, Shenzhen 200
- steel companies 277
- storm dynamics study, Hydro-Radar 173
- subcontractors: learning experience in P-51 project 227, 287
- sub-sea development ROV technology 170–71
- supplier relationships for innovation 79–80
- supplier risks in PPI 113
- suppliers, potential, procurers' unmet needs 72
- supply chain interaction Rotherham case 137
- supply chain management 115–16
- supply chain response
 - Rotherham NHS Foundation Trust (UK) 128
- supply chains, globe-spanning, currency risk and political risk 91
- supply risk of products 239
- support services for innovating firms 4
- supranational rules 266
- surface mining, Department of Interior (DoI) 157
- sustainability criteria in tenders, not in healthcare 54
- sustainable construction
 - e-health, protective textiles, bio-based products, recycling, renewable energy 107
- Sustainable Procurement Task Force, 2005 241, 257
 - and link with PPOI 238–40
- sustainable products and services 52
- sustainable services, provision of use knowledge and technology knowledge 239
- taxpayer funds from public sector 147
- TCE *see* transaction cost economics
- technical development, rapid digital services 71
- technical expertise of purchasing authorities
 - for functional requirements 76–7
- technical intelligence lack, policy need 60
- technical judgement for assessment 16
- technical skills for functional requirement development 77–9
- technical support from government 77
- technical testing of products, insufficient alone 77
- technological backwardness 268
- technological capabilities matrix by Lall 277
- technological capabilities of CENPES 275–7, 286, 289–91
 - platform design 289
- technological effort, low level, in BOSI 286

- technological knowledge transference 227–8
- technological learning and PPI in developing countries 268–73
- technological learning in Brazil
 - by EPC contractors working on P-51 280–83
 - by Subcontractors Working on P-51 283–90
- technological learning in developing countries 279
- technological learning in platform projects 278
- technological risks 80 100–101
 - non-completion, under-performance of good or service 92–3
 - of procured service or product 79
 - under- or false performance 229
- technological risks and costs 101
- Technological Standards of EV Charging System, Shenzhen 200
- technologies, socially undesirable, underinvestment 268
- technology lag in developing countries 292
- technology licensing agreements 286
- technology of Company A, Jinan, maturation 193
- technology procurement, advanced 78
- telecommunications
 - linking modeling and ecological information centers 169
- telecommunications providers 213
- tender, negotiated 52
 - common in works and office equipment 53
- tendering process, expert advice for inexperienced procurers 14–16, 105
- tenders, assessment of 16
- tenders, award criteria, innovation requirements 51
- tenders, restricted 53
- testing and experimental environments
 - piloting of new products 78
- testing and piloting activities
 - user linking for performance verification 78–9
- testing ground for innovative products 148
- third-party technology 288
- TIGER system 162–3
 - censuses of United States, Puerto Rico, Island areas 163
 - local and tribal governments use 163
- time to market and risks 102–3
- toy industry, fad-driven products, demand for 91
- training programmes 82, 104
- transaction bounded investments 122, 135, 138
 - inputs for single transaction 123
- transaction cost economics (TCE) 122
 - contract between principal and agent 122
 - economics of contracting 122
- transactions, characterization, uncertainty 122
- translation of protocols, formats and languages 213
- turbulence risks 93
- UK Department for Business, Innovation and Skills (BIS), 2009 116
- UK National Health Service (NHS) pilot project 124
- uncertainty, absence of information 122
- uncertainty reduction, of customer and supplier 137
- underperformance of procured service 79
- Understanding Public Procurement of Innovation (UNDERPINN) 40
 - survey 42–4
- unemployment, fighting, US 158
- US Agency for International Development AIDAIR 150–51
- user-production interaction 72
- users, engagement of, for functional requirements 76–7
- user-supplier interactions, BYD, Shenzhen 196

- vehicles, China as fastest developer of automobile industry 182
- vendor qualifying condition, FAR policy (US) 151
- venture capital 104
- vertical alignment
 - policy-makers, general management, operational level 81
- vertical coordination, ministries, agencies, local government 81
- waste, confidential, limited traceability
 - HM Revenue and Customs (HMRC) 249
- waste management and paper procurement
 - traditional approach 244–9
- waste paper as valuable commodity 249–50
- weather radar systems, advanced, definition 172
- Weather Surveillance Radar-88D 172
- web-based telecommunication technologies (information and communication technology) 211
- web-service technologies 221
- wider market demand, demonstration of 136
- wind speed determination 173
- World Trade Organization 180
- World War II, hostile aircraft and missiles 172
- WSR-88D
 - dual-polarization technology upgrade 173
- Wuzhoulong Motors, Shengzhen energy-saving coaches, 2000 195
- models of NEVs 198–9
- two-layered hybrid bus model 199
- Zero Waste Mattress service
 - forward commitment procurement (FCP) 116