

Index

- 2001: A Space Odyssey*, 172
- 3-D systems, 66
- 3D Visible Enterprise, 169, 171
- 3G technology, 47
- Aarstiderne, 40
- Abalones, 188
- Acceleration. *See* Speed
- Accenture, 120
- Adhesives, 188
- Advanced Computing Systems
 Association (USENIX), 244n50
- Advertising, 73–75, 161–162
- AEG, 199
- Aerogels, 193
- Africa, 55
- Agile Alliance, 111, 223–224
- Aging, 121–123, 256n32
- Agriculture, 31–32, 58–59, 89–90
- Agritime, 41
- Agri-tourism, 39
- Aguirre, Cris, 165–166
- Ahtisaari, Marko, 87
- Aircraft, 3, 52, 240n4
 light design and, 193–196
- Airlines, 53, 106–108, 198–199
 code-sharing tickets and, 57–58
 cost and, 101–103
- Air pollution
 “Asian brown cloud,” 10
 carbon dioxide and, 15, 20, 22, 53, 178,
 240n4
- Airports, 182, 233n30
 flow and, 100–103, 106–107
 Heathrow, 52, 102
 music for, 175
 ontological alienation and, 100–103
 Schiphol, 105, 107–108, 251n19
 urban planning and, 100–103, 106–
 108
- Akamai, 69
- Alexander, Christopher, 80–81
- Algeria, 35
- Alternative fuels, 59
- Always-on mode, 37–38
- Ambient intelligence (AmI), 204–
 209
- American Nervousness* (Beard), 35
- Amsterdam Medical Centre (AMC),
 118–119
- Amsterdam Real Time, 84
- Amtrak, 207
- Ancient Medicine: Airs, Waters, Places*
 (Hippocrates), 214–215
- Andaman Islands, 177–178
- Andersen, Peter Bøgh, 214
- Animal adoption, 41
- Animateurs, 100
- Anthropocentric interfaces, 204
- Antonelli, Paola, 190
- Anxiety, 104

- Apollo, 140
 Appointments, 46–47
 Architecture, 76–77, 165
 AI security and, 201
 flow and, 105–109
 liquid, 192
 mediascapes and, 89
 networks and, 80–83
 ontological alienation and, 100–111
 relationships and, 97–100
 smart, 191–192
 sound and, 182
 theater and, 78–80
 Aristotle, 172, 216
 Arnhem Central, 108
 Art, 97, 107, 136, 164–165
 avant garde, 181–182
 locality and, 76–77, 83
 media, 181–184
 wetware and, 202
 Art+Com, 164
 Arteries, 194
 Artificial intelligence, 201
 Artificial skin, 201, 275n46
 Arzoon, 169
Asheron's Call, 151
 “Asian brown cloud,” 10
Audio-Vision (Chion), 176–177
 Australia, 39
 Austria, 15
 Automated teller machines (ATMs), 83, 198
 Automobiles, 3, 5, 52, 86–87, 187, 228n7
 car-sharing and, 19, 24, 241n14
 code-sharing tickets and, 57–58
 electronics in, 198
 environmental issues and, 53–54
 GPS and, 24
 logistics and, 55–56
 time costs of, 53–54
 tramways and, 39
 Baller, Jim, 88
 Baltic Rim, 80
 Bandwidth, 4, 89
 Barba, Eugenio, 225
 Barter, 125–128
 Batty, David, 120–121
 Baumgart, Michael, 26
 BBC, 221–222, 272n45
 Beard, George, 35–36, 236n29
 Bébéar, Claude, 78
 Beethoven, Ludwig von, 49
 Behrens, Peter, 199
 Belly dancing, 49
 Benkler, Yochai, 130, 223
 Benthem, Jan, 97, 108–109
 Bentley, Tom, 143, 215
 Benyus, Janine, 73–74, 187–188, 190
 Bergson, Henri, 38, 103, 251n8
 Bhutan, 88
 Biking, 72
 BioLogic, 45–46
 Bio-mechatronics, 201–203
 Biomimetics, 187–199, 270n1
Biomimicry (Benyus), 190
 Biotechnology, 3, 228n8
 Birds, 194
 Black Rock Forest project, 166
 Blogs, 81
 Blogservatories, 166–167
 Bloomberg, Michael, 176
 Bluetooth technology, 47
 Boating, 72
 BodyMedia, 21
BoloBolo (P.M.), 8, 34, 228n16
 Bombay Lunch Delivery, 40
 Bonami, Franco, 76
 Borg drift, 116, 201–202
 Bornholm Rooster, 93
 Bourdieu, Pierre, 35
 Bouthillier, Larry, 141
 Brand, Stewart, 48
 Britain, 17, 35, 41

- British Airports Authority, 233n30
 British Airways, 104
British Medical Journal, 117
 British Telecom, 154, 215
 Brittle stars, 194
 Britton, Eric, 124
 Broadband, 4
 Brook, Peter, 79
 Bryant Park, 87
 Buber, Martin, 132, 180
Building Jerusalem (Hunt), 35
 Burdick, Joel W., 202
 Burning Man Festival, 94
 Business. *See* Industry
 Byron, George Gordon, 35
- Cage, John, 182
 Cahn, Edgar, 126
 California Institute of Technology, 202
 Calvino, Italo, 26–27
 Cambridge University, 136
 Canada, 12–13, 58
Canto Ostinato, 211–212
 Carbon dioxide, 15, 20, 22, 53, 178, 240n4
 Cardiovascular disease (CVD), 114, 253n4
 Carlyle, Thomas, 35
 Carroll, John, 8–9, 212–214, 225, 279nn3, 8, 9
 Casella Stanger, 240n3
 Cassirer, Ernst, 103
 Castells, Manuel, 99, 212
 Center for Aging Service Technologies (CAST), 123
 Center for Neuromorphic Systems Engineering, 202
 Centre for Knowledge Societies, 91
 Centre for Physical Electronics, 203
 Ceppi, Giulio, 147
 Ceramics, 188, 190, 195
 Chain approach, 58
- Chalmers, Matthew, 170
 Chatwin, Bruce, 29
 Chermayeff, Serge, 81
 Chief information officers (CIOs), 57
 China, 40
 Chion, Michel, 176–177, 267n50
 Choronomic influence, 73–74
 Choupal sanchalak, 90
Chronos, 33
 Chronotherapy, 34–35
 Cisco, 155
 Citta Slow, 41
City of God (St. Augustine), 170
 Clark, Jim, 31, 38–39
 CLIFF, 116
 Climate Protection Partnership (CLiPP), 52
 Climate tickets, 52
 Clock-face pulse timetabling, 58
 Clocks, 33–38
 Cloning, 166
 Closedloop Solutions, 169
 COBRA, 181
 Coca-Cola, 67
 Code-sharing tickets, 57–58
 Cognition technologies, 204
 Cohen, Tal, 278nn66, 68
 Cohousing, 19
 Coleman, Roger, 85–86
 Collaborative mapping, 83–84
 Collagen, 194
Colocation 2002: A Telegeography Guide to Power and Space, 69
 Columbia University, 138–139
 Comedia, 75
 Commons-based peer production, 130
 Communication, 222. *See also*
 Information technology
 ambient intelligence and, 204–209
 customer satisfaction and, 207–209
 face-to-face, 180–183
 The Oxford Muse and, 180–181

- Communication (cont.)
 - superficial, 180–181
 - telepresence and, 60–67
- Communication analysts, 77
- Compact discs (CDs), 11
- Complexity, 22–23
 - control and, 214
 - decentralization and, 117–121
 - design frameworks and, 213–226
 - Duck Syndrome and, 195
 - edge effect and, 216–218
 - information and, 162–164, 167–168
 - life cycle assessment and, 230–231n16
 - locality and, 74
 - manufacturing and, 188
 - ontological alienation and, 100–111
 - patient issues and, 273n49
 - Prigogine and, 38
 - smartness and, 195–196
 - time scales and, 32–49
- Composites, 190
- Computer-aided design (CAD), 82
- Computer Music Center, 174
- Computing, 5, 165, 191
 - AmI and, 204–206
 - distributed, 68–70
 - ecological footprint of, 10–11
 - embedded systems and, 197–206
 - Fluid Time project and, 46–47
 - human superiority and, 206–208
 - increase of, 198–199
 - light-speed crisis and, 68–69
 - materials use of, 10–11
 - pervasive, 205–206
 - proactive, 205
 - psychosocial, 205
 - response times and, 199
 - schools and, 139–140, 262n41
 - speech interfaces and, 172–177
 - speed and, 43–44
 - storewidth paradigm and, 68–69
 - telepresence and, 60–67
 - ubiquitous, 173–177, 204
 - viruses and, 93
 - wearable, 4, 21, 37, 116, 198, 203
- Connected appliances, 4
- Connected clothing, 237n35
- Connected Community, 85
- CONQUEST, 115
- Consilience* (Wilson), 30
- Constructivists, 181
- Consumption. *See* Environmental issues; Materials
- Context
 - advertising and, 73–75
 - art and, 76
 - business models and, 224–225
 - choronomic influence and, 73–74
 - collaborative design and, 220–224
 - complexity and, 74
 - consequences and, 214–216
 - control and, 225–226
 - design frameworks and, 213–226
 - design-free zones and, 94–95
 - edge effect and, 216–218
 - face-to-face, 180
 - iconic architecture and, 76–77
 - importance of, 74
 - learning and, 136–137
 - literacy and, 162–164
 - live performance and, 78–80
 - mediascapes and, 83–96
 - networks and, 80–83 (*see also* Networks)
 - new domesticity and, 45–46
 - place development and, 74–75
 - sense and respond, 213–214
 - shopping and, 76
 - simplicity and, 74
 - social fiction and, 219–220 (*see also* Social issues)
 - spectacle and, 75–80
 - territorial capital and, 79–80
 - tourism and, 76–77
- Control, 1, 5, 214
 - context and, 225–226

- speed design and, 43–44
 time scales and, 32–49
 Conviviality
 commons-based peer production and, 130
 communities of practice and, 131–133
 decentralization and, 130–131
 health issues and, 113–114 (*see also* Health issues)
 LETS and, 125–128
 networks and, 130–133
 services and, 125–129
 Cooper, Alan, 224–225
 Corporate universities, 141–143
 Cottage Baker, 19
 Cottam, Hilary, 121, 221, 255n26, 281n29
 Creative class, 77–78
 CrossWorlds, 169
 Crouwel, Mels, 97, 108–109
 Culture. *See also* Music; Social issues
 art and, 76–77
 evolution and, 30–31
 live performance and, 78–80
 networks and, 80–83
 spectacle and, 75–77
 speed and, 29–49
 territorial capital and, 79–80
 Customer relationship management (CRM), 36
 Cuttlefish, 192
 Cyberspace. *See* Internet
 “Cyborg Manifesto” (Haraway), 116, 201, 254n13
 Cyrano Sciences, 66

Dabbawallah, 40–41
 Dada artists, 181
 Daimler-Chrysler, 56
 Dashboards, 167–170
 Databases, 36–37, 69, 82, 86, 90, 221–222
 Data Harvester, 166
 Data-mining, 5

 Datamitt, 177
 Davis, Mike, 201
 Death, 133–134
 Debord, Guy, 77
 Decaux, J. C., 83
 Decentralization, 71
 Dellarocas, Chrysanthos, 130
 Delta Works, 220–221
 Demand-responsive systems, 6–7
 Dematerialization. *See* Materials
 den Doollaard, A., 221
 Denmark, 15, 40
 Depression, 104, 114
 Design
 ambient intelligence and, 204–209
 architectural, 76–83 (*see also* Architecture)
 big effects of small actions, 14–15
 bio-mechatronics and, 201–203
 biomimetics and, 187–199
 blame and, 7
 business models and, 224–225
 CAD, 82
 cities and, 73–76 (*see also* Urban planning)
 collaborative, 220–224
 context and, 73–96
 control and, 5, 214, 225–226
 edge effect and, 216–218
 embedded systems and, 197–206, 273n31
 end-of-pipe approach and, 24
 environmental impact and, 1, 13–17 (*see also* Environmental issues)
 experience and, 78
 feature drift and, 186–187
 flow and, 105–109, 211–226
 form-follows-function approach and, 196
 frameworks for, 213–226
 future and, 2
 Hannover Principles and, 25–26
 health issues and, 121–123

- Design (cont.)
- humanity and, 1
 - iconic and, 76–77
 - increased material burden and, 9–27
 - industrial age and, 2–3
 - law of locality and, 70–71
 - learning and, 135–137, 143–156
 - light-speed crisis and, 68–69
 - light structures and, 191–196
 - marketing and, 73–77
 - material/process integration and, 189–193
 - mobility and, 51–72
 - nature and, 187–196, 272n17
 - office, 97–98, 100
 - ontological alienation and, 100–111
 - originality and, 217–218
 - perspective for, 6
 - plug-and-play approach and, 218
 - predict-and-provide policy and, 51–57
 - preferred situations and, 1–2
 - product systems and, 19–21
 - rebound effects of, 4–5
 - reverse-engineering and, 43–44
 - rhythm and, 44–45
 - services and, 6–8, 16–21
 - simplicity and, 195–196
 - spectacle and, 75–77
 - speed and, 29–49
 - storewidth paradigm and, 68–69
 - sustainability and, 17–18
 - systems-based, 100–111
 - time planning and, 54
 - top-down, 216–218
 - transparency and, 104
 - vision and, 82
- Design for the Real World* (Papanek), 7
- Design-free zones, 94–95
- Deutsche Post World Net (DPWN), 56–57
- Digiscents, 179
- Digital crowds, 85
- DigitalEarth.org, 81
- Digital Economy, The* (Tapscott), 36
- Digital graffiti, 84–85
- Digital ID industry, 200–201
- Digital Library for Earth Systems Education (DLESE), 166
- Digital memory, 85
- Digital photography, 20
- Digital playgrounds, 66
- Digitization, 36–37
- faster-to-closer approach and, 67–70
 - telepresence and, 60–67
- DILEMMA, 115
- Disability-adjusted life years (DALYs), 13, 231n18
- Disease. *See* Health issues
- DistantOne experiment, 65
- Dolce farniente*, 35
- Donath, Judith, 66–67
- Doors of Perception conference, 22, 61, 67, 171
- Dot-com era, 42
- Douglas, Michael, 39
- Downshifting, 41–42
- Downsizing, 124, 207
- Doyle, Linda, 89
- Doz, Yves, 218
- Drucker, Peter, 77, 215
- Dublin Ad Hoc Wireless Network (DAWN), 89, 249n46
- Dubois, René, 117
- Duck Syndrome, 195
- Duguid, Paul, 141, 145–147
- Dunbar, Robin, 128–129
- Dunne, Tony, 63–64, 66
- Dupuy, Jean-Pierre, 117
- Durée*, 38
- Durkheim, Emil, 114
- Dutch dikes, 221
- Dynamic resource allocation, 44
- Dyson, Esther, 43, 154–155
- Ecological footprints, 10–11, 215
- Canadian study of, 12–13

- dashboards and, 169
- German study of, 12
- Kathalys and, 15–16
- MET matrix and, 13–14
- photographic film and, 20
- PRÉ group and, 13
- weighting and, 13–14
- Ecological rucksack, 12
- Eco-nets, 42
- Economic issues, 10
 - advertising and, 73–75
 - airports and, 101–103
 - business models and, 55, 224–225
 - context and, 73–74
 - customer satisfaction and, 207–209
 - dot-com era and, 42
 - flow and, 212
 - GDP measurement and, 52, 55, 92, 96, 113, 137
 - growth of, 30
 - Hansa League and, 80
 - health issues and, 113, 121 (*see also* Health issues)
 - homeland security and, 200
 - human capital and, 79–80
 - knowledge workers and, 77–78
 - learning and, 137–143
 - LETS and, 125–128
 - logistics and, 55–60
 - mediascapes and, 83–96
 - mobility and, 52–57
 - networks and, 80–83
 - Olympics and, 78
 - open source and, 222–223
 - part-time work and, 38, 41–42
 - patient issues and, 273n49
 - physical assets and, 98–99
 - place marketing and, 74–77
 - real time and, 36–38
 - regional economic architecture and, 80
 - self-service economy and, 219–220
 - shopping and, 76
 - slow movements and, 41–42
 - telepresence and, 60–67
 - time scales and, 33–49
 - trust and, 42
 - U.S. standard of living and, 33–34
- Economist, The*, 36, 76, 207
- Eco-tourism, 39, 237n41
- Edge effect, 216–218
- Edutainment, 144
- Efficiency, 11–12
 - commuting and, 54–55, 60
 - delivery services and, 57–60
 - downshifting and, 42
 - logistics and, 55–57
 - materials and, 187–196
 - mobility and, 51–72
 - phitodepuration and, 45–46
- Eisermann, Richard, 45
- Elastin, 194
- Electricity, 3, 199
- Electronic Arts, 151
- Electronic performance support system (EPSS), 37
- Elliman, Paul, 176, 268n48
- Elliot, David, 77
- E-mail, 5, 37, 131, 162
 - learning and, 136, 140–141
 - telepresence and, 60–67
- End-of-pipe approach, 24
- Energy, 8, 233n28
 - art and, 181–182
 - automobiles and, 53–54
 - buildings and, 192
 - computer manufacturing and, 10–11
 - end-of-pipe approach and, 24
 - factor 20 and, 23
 - high-speed trains and, 53
 - increased material burden and, 9–27
 - industrial pollution and, 12–17
 - information technology and, 10–12
 - Kathalys and, 15–16
 - nature and, 196–197
 - telepresence and, 60–67
 - TNS Framework and, 16–17

- Energy (cont.)
 transportation systems and, 52
 tripled production of, 9–10
- Eno, Brian, 175
- Enterprise resource management (ERM), 36
- Environmental issues, 1, 3, 7, 113
 air quality, 10, 15, 20, 22, 53, 178, 240n4
 air traffic and, 52–53
 automobiles and, 53–54
 climate tickets and, 52
 cloned trees, 166
 context and, 74
 DALYs assessment and, 13
 eco-guilt, 23
 ecological footprints and, 10–11 (*see also* Ecological footprints)
 ELIMA and, 13
 forest instrumentation and, 166
 fossil fuel use and, 31–32
 garden effect and, 46
 global warming, 2, 10, 228–229n1
 Hannover Principles and, 25–26
 high-speed trains and, 39–40, 53
 impact assessment and, 13–15
 increased material burden and, 9–27
 industrial pollution, 12–17
 information and, 164–165
 invisibility of, 21–24
 land use, 13
 mobility and, 52, 71–72
 noise pollution, 175–176
 phitodepuration and, 45–46
 population explosion and, 5, 9–10
 Tipping Points and, 74
 TNS Framework and, 16–17
 toxic chemicals, 10–11, 13, 165–166
 T-Vision and, 164–165
 waste and, 12–13, 161–162
 weather, 10
 weighting and, 13–14
- Environmental Life Cycle Information Management and Acquisition (ELIMA), 13, 231n19
- eRENA project, 65
- ESTEEM, 115
- Estonia, 80
- Eternally Yours, 14, 231n21
- Ethernets, 11
- Ethics, 7
- European Commission, 11, 124, 227n5
- European Design for Aging Network, 122
- European Union, 15, 55, 79–80
- Evaluators, 82
- Everard, Christopher, 76
- Everquest*, 151
- Evolvers, 82
- Exabytes, 164
- Experience designers, 78
- Exp exhibition, 78
- Extended homes, 19
- Factor 20, 23
- Fakespace systems, 66
- Fantasy, 151
- Faraway project, 64–65
- Fathom, 138–139, 259n15
- Feature drift, 29, 186–187
- FedEx, 37, 56, 84
- Fernández-Galiano, Luis, 171, 271n11
- Fibers, 190, 194, 197
- Findeli, Alain, 213
- Fire and Memory* (Fernández-Galiano), 171, 271n11
- FirstDirect, 218
- Five Capitals Model, 16
- Flores, Fernando, 172–173
- Florida, Richard, 77
- Flow, 92, 111, 165, 211. *See also* Complexity; Context
 airports and, 100–103, 106–107
 business models and, 224–225
 collaborative design and, 220–224
 consequences and, 214–216

- control and, 225–226
 designing space for, 97–98, 100, 105–109, 212–213
 economic issues and, 212
 edge effect and, 216–218
 mediascapes and, 83–96
 movement studies and, 108–109
 office design and, 97–98, 100
 rhythm and, 44–45, 48–49, 173–177
 sense and respond, 213–214
 social fiction and, 219–220
 time scales and, 46–47
 Fluid Time project, 46–48
 Fluxus, 182
 Food, 40, 58–59
 Ford Motors, 56
 Forrester research, 207
 Forum for the Future, 17
 Fossil fuels, 13, 229n4
 Fox, Kate, 178
 France, 40
 Fraunhofer-Gesellschaft, 61
 Fujihata, Masaki, 182–183
- Gage, John, 165
 Games, 151, 156–157, 214, 222
 GammaMaster, 165
 Garden effect, 46
 Gardner, Howard, 136–137, 150, 259n6
 Gates, Bill, 209
 Gavaghan, Kevin, 218
 Gaver, Bill, 173–177, 179
 Geiger counter, 165, 175
 Gell-Mann, Murray, 99, 218
 General Electric, 37, 168
 General Motors, 198
 Geographical information systems (GIS), 82
Geography of Time, A (Levine), 34, 177–178
 Geo-marking, 84
 Geomatics, 5, 82
 George, Susan, 31
- Germany, 12, 15
 automobiles and, 53–54
 high-speed trains and, 53
 telepresence and, 61
 Gilder, George, 11, 68, 69–70
 Gislason, Halldor, 94
 Gladwell, Malcolm, 74, 215
 Glasgow University, 170
 Global Positioning System (GPS), 24, 83–84, 90, 93, 242n26
 Global Supply Chain Management Forum, 57
 Global warming, 2, 10, 229n1
 Gobert, Danielle, 37
 Godard, Jean-Luc, 156
 Goetz, Thomas, 222
 Goldberg, Ken, 171–172, 177, 266–267n33
 Gombrich, Ernst, 174–175
 Gomes, Lee, 42
 Goonatilake, Susantha, 217, 280nn16–18
- Government
 homeland security and, 200
 information and, 164
 learning and, 135–136, 140–141, 151, 154
 Graham, Stephen, 74, 246n14
 Graham, Tony, 78
 Gray, John, 63
 Grose, Thomas, 202
 Gross domestic product (GDP), 52, 55, 92, 96, 113, 137
Growth Fetish (Hamilton), 24
 Grutzen, Paul, 229n2
Guardian, 23, 120
- Hacker Ethic, The* (Himanen), 159
 Hamilton, Clive, 23–24
 Hampden-Turner, Charles, 141, 148
 Han, Yosh, 167
 Handan Organic Vegetables, 40
 Hannover Principles, 25–26

- Hansa League, 80
- Hanze Expo, 80
- “Happiness: A Survival Guide for Art and Life” (MAM show), 77
- Haraway, Donna, 116, 201, 254n13
- Hard assets, 79–81
- Hargreaves, David, 136, 143
- Harvard University, 136, 141
- Hatch, T., 136, 259n6
- Hawken, Paul, 11–12, 16, 23
- HazMat Smart Strip, 165–166
- Head-mounted displays, 66
- Health: Co-creating Services* (Cottam and Leadbeater), 121
- Health issues, 3, 31, 94
- aging and, 121–122
 - bio-mechatronics and, 201–203
 - cardiovascular disease and, 114, 253n4
 - care crisis and, 113
 - convivial work and, 125–129
 - costs of, 113–116, 253n3
 - DALYs assessment and, 13
 - death and, 133–134
 - decentralization of services and, 117–121
 - ELIMA and, 13
 - government and, 114, 121–122
 - information technology and, 115–121
 - jet lag, 34
 - mental health and, 120–121
 - nature and, 217
 - networks and, 124–125
 - neurasthenia, 35–36
 - obesity, 72, 244–245n55
 - quality time and, 37–42
 - self-care and, 117
 - sensory stimulation and, 34–35
 - slow movements and, 38–41
 - suicide and, 114
 - technology and, 115–117
 - time scales and, 32–49
 - unbundling and, 124–125
 - wearable computers and, 21
- Heart experiment, 65
- Heathrow Airport, 52, 102
- Heden, Flemming, 20
- Hen adoption, 41
- Henderson, Hazel, 118, 143
- Herz, J. C., 151, 157–158
- Hewlett-Packard, 86, 215
- High Speed Network Platform, 40
- High-speed trains (HSTs), 31, 39–40, 53, 58
- Hillis, Danny, 164
- Hillman, Mayer, 54
- Hilton Hotels, 38
- Himanen, Pekka, 159
- Hippocrates, 131, 214–215
- Hirsch, Jesse, 222–223
- Hoch, Dee W., 30
- Holidays, 34
- Holland, 13–16, 40, 58, 76, 81–82, 220–221
- Holzer, Jenny, 107
- Homeland security (HS) technology, 200
- HomeTech, 45
- Hong Kong, 19
- Hospitals. *See* Health issues
- Hosting, 76, 78
- HUMAN, 116
- Human capital, 8
- ambient intelligence and, 204–209
 - bartering and, 125–128
 - bio-mechatronics and, 201–203
 - borg drift and, 116, 201–202
 - communication and, 172–177
 - communities of practice and, 131–133
 - commuting and, 54–55, 60
 - conviviality and, 113–134
 - customer satisfaction and, 207–209
 - downsizing and, 124, 207
 - embodied knowledge and, 109–111
 - face-to-face communication and, 180–183
 - greater intelligence of, 206–208
 - health issues and, 117–121 (*see also* Health issues)
 - information market and, 124

- job quality and, 124–125
- kairological time and, 33
- learning and, 135–159
- literacy and, 161–184
- mediascapes and, 83–86
- multiple intelligence and, 136
- networks and, 80–86, 124–125
- office design and, 97–98, 100
- playtime and, 156–158
- quality time and, 37–42
- relationships and, 97–100
- sensory stimulation and, 34–35, 170–172
- slow movements and, 38–41
- smell and, 177–180
- soft assets and, 79–81
- sound and, 173–177
- spectacle and, 75–80
- telepresence and, 60–67
- theater and, 78–80
- time scales and, 32–49
- trust and, 42
- virtual communication and, 62–67
- walking and, 72
- Human Interface Technology
 - Laboratory, 65
- HungryMinds, 138
- Hunt, Tristram, 35–36

- Iannucci, Armando, 180
- IBM, 104, 154, 172, 174, 202, 215, 224
- IDC, 229n5
- Illich, Ivan, 44–45, 54, 75–76, 116–117, 135–136, 170, 180
- Imagineers, 3, 100
- India, 40, 52–53, 90–91
- Industry, 2–3, 21–22, 245n3
 - advertising and, 73–75, 161–162
 - big effects of small actions, 14–15
 - business models and, 55, 224–225
 - carrying capacity of, 29
 - clock and, 32–33
 - computer manufacturing and, 10–11
 - context and, 73–74
 - corporate universities and, 141–143
 - cultural, 76–78
 - customer satisfaction and, 207–209 (*see also* Economic issues)
 - data caches and, 69
 - delivery services and, 57–60
 - digital ID, 200–201
 - downsizing and, 124, 207
 - educational, 137–138, 141–143
 - experience and, 78
 - Fluid Time and, 46–47
 - fossil fuel use of, 31–32
 - health care, 115–116, 124
 - impact assessment and, 13–15
 - inefficiency and, 11–12
 - information age and, 10
 - job quality and, 124–125
 - knowledge workers and, 77–78
 - locality and, 73
 - logistics and, 55–57
 - manufacturing complexity and, 188
 - material/process integration and, 189–193
 - mediascapes and, 89–96
 - military and, 163–166, 189, 254n12
 - music and, 48–49
 - Olympics and, 78
 - OTO and, 56
 - patient issues and, 275n50
 - place marketing and, 74–77
 - pollution and, 12–17 (*see also* Environmental issues)
 - predict-and-provide policy and, 51–57
 - real time business and, 36–38, 169
 - research factories and, 188–189
 - response times and, 199
 - self-service economy and, 219–220
 - slow movements and, 41–42
 - speed and, 45–46
 - sustainability and, 16–18
 - systems-based design and, 100–111
 - telepresence and, 60–67
 - time scales and, 32–49, 57–60
 - tourism, 39, 76–77

- Industry (cont.)
 - transportation and, 55
 - trust and, 42
 - warehousing and, 57
 - waste from, 12
- Information, 10. *See also* Learning
 - before-and-after knowledge maps and, 168
 - communication and, 172–177
 - complexity and, 162–164, 167–168
 - context and, 162–164
 - distraction and, 162–163
 - ecological, 166–167
 - face-to-face communication and, 180–183
 - government and, 164
 - interpretation issues and, 167
 - knowledge at a distance and, 171–172
 - Library of Congress and, 163–164
 - military and, 163–166
 - olfactory, 177–180
 - overload of, 162–164
 - physical interaction and, 167–168
 - sensual, 170–177
 - smart skin and, 193–194
 - sound research and, 173–177
 - spreadsheets and, 168, 169
 - stimulation and, 180
 - tactile, 177
 - T-Vision and, 164–165
 - visual, 170–177
 - waste and, 161–162
- Information Societies Technology program, 219
- Information Society Technologies
 - Advisory Group (ISTAG), 204, 209
- Information technology, 15–16
 - advertising and, 73–75, 161–162
 - always-on mode and, 37–38
 - asset management and, 98–99
 - Bhutan and, 88
 - clutter problem of, 161–162
 - complexity theory and, 38
 - context and, 162–164
 - cost and, 90, 149–150
 - dashboards and, 167–170
 - data collection and, 36–37
 - ecological footprint of, 10–12
 - energy use and, 10–12
 - Fluid Time and, 46–47
 - health issues and, 115–121
 - LETS and, 125–128
 - learning and, 141, 149–150
 - literacy and, 161–184
 - materials and, 10–11
 - mediascapes and, 83–96
 - overload and, 162–164
 - paper use and, 11
 - proximity applications and, 86–87
 - speed and, 36–38
 - spreadsheets and, 168–169
 - SRDZs and, 82–83
 - telepresence and, 60–67
 - time scales and, 32–49
 - wireless graffiti and, 84
- Inhabited Information Spaces, 85
- Innovation, 99–100, 218. *See also* Design
 - as adjustment, 215
 - agenda for, 4
 - consequences and, 3
 - design-free zones and, 94–95
 - feature drift and, 29, 186–187
 - open source, 222
 - rebound effects of, 4–5
 - slow movements and, 44–45
- Instant messaging, 131
- Insurance companies, 114
- Intellectual value, 43
- Interaction Design Institute Ivrea, 47, 64–65, 83
- Interactive voice recognition (IVR), 207–208
- Interface, 224
- International Data Corporation, 149
- Internet, 158
 - Bhutan and, 88
 - bio-mechatronics and, 202–203
 - colocation and, 69

- cost and, 90
 digital graffiti and, 84
 distance learning and, 140–141
 economic issues and, 52–57
 energy use of, 11
 health issues and, 115–121
 law of locality and, 70–71
 LETS and, 126, 128
 load balancing and, 69
 LSPs and, 90–91
 Olympics and, 78
 online ticketing and, 207–208
 promises and, 9
 real time and, 36–38
 road traffic increase and, 61
 speed and, 42
 telepresence and, 60–67
 timetables and, 57–60
 visual information and, 171–172
 wearable computers and, 21
- Irie, Keiici, 182
 Irwin, Robert, 182
 Ishii, Hiroshi, 62
 Israel, 48
 Italy, 35, 41, 46–47
 ITC, 90
 Ithaca Hours, 128
- Jameson, David, 174
 Japan, 43, 76, 144–145
 Java, 153
 Jay, Martin, 170
 Jazz, 48
 Jégou, François, 19
 Jeremijenko, Natalie, 166–167, 183
 Jet lag, 34
 Jhunjhunwaller, Ashok, 91
 Johnston, Peter, 227n5
 Joint loading, 59
 Juice Software, 169
- Kabyle people, 35
 Kac, Eduardo, 184, 269n67
 Kahn, Herman, 227n4
 Kahn, Louis, 86
Kairos, 33
 Kastens, Kim, 166
 Kathalys, 15–16
 Kaye, Joseph, 179
 Kelantese people, 35
 Kemp, Martin, 194–195
 Kennedy, Margrit, 127
 Kevlar, 188
 Kieslinger, Michael, 47
 KISS, 115
 KLM Royal Dutch Airlines, 58
 Knowledge workers, 77–78
 Kolkota, 39
 Kontiki, 69
 Koolhaas, Rem, 106–107
 Kotler, Philip, 74–75
 Krebs, Valdis, 131
 Kroker, Arthur, 203
 Kunzru, Harry, 219
- Lamont-Doherty Earth Observatory,
 166
 Landry, Charles, 75
 Landsat, 164
 Land use, 13
 La Transhumance, 51
La vie associative (city-webs), 80–83,
 132
 Law of diminishing amazement (LODA),
 187
 Law of locality, 70–71
 Leadbeater, Charles, 49, 121, 221,
 255n26, 281n29
 Learning, 166, 277n63
 applied skills and, 137
 assessment of, 150–151
 collaborative, 152–154
 communities of practice and, 153–154
 context and, 136–137
 copying and, 196–197
 corporate universities and, 141–143
 design for, 135–137, 143–156
 distance learning and, 139–141

- Learning (cont.)
 economic issues and, 137–143
 e-mail and, 136
 government and, 135–136, 140–141, 151, 154
 instant knowledge and, 145
 meaning and, 148–149
 mentors and, 151–152
 mobile phones and, 144–145
 multiple intelligence and, 136
 networks and, 149–150
 new geographies of, 158–159
 overload and, 142–143
 physical interaction and, 167–168
 playtime and, 156–158
 search skills and, 150
 smartness and, 196–197
 space and, 146–148
 spending on, 137–138, 149, 154–155
 teachers and, 135–136, 154
 thinking and, 143
Learning Beyond the Classroom (Bentley), 143
 Leasing, 18
 Leaves, 194
 Le Campanier, 40
 Lee, Hau, 57
 Legal issues, 5
Legible City (Shaw), 182
 Lerup, Lars, 89
 Lessig, Lawrence, 223
 Lettrists, 181
 Levine, Robert, 33–35, 48, 177–178
 Lewis, Ted, 198
 Liberty, 205
 Library of Congress, 163–164
 Life cycle assessment (LCA), 230–231n16
 Lightness
 ecological footprints and, 10–16, 20
 industry and, 21–22, 108
 social burden of materials and, 9–27
Light on the Net (Fujihata), 183
 Light-speed crisis, 68–69
 Linden, Greger, 205
 Liquid architecture, 192
 Literacy. *See also* Information face-to-face communication and, 180–183
 future, 183–184
 Live performance, 78–80, 83
 Livermore National Laboratories, 193
 LiveWork, 220
 Living Memory, 84
 Livingstone, Sonia, 156
 Load balancing, 69
 Local exchange and trading systems (LETS), 125–128
 Local Futures, 79–80, 247n16
 Locality, 129. *See also* Context globalization and, 153
 law of, 70–71
 manuals and, 163–164
 network services and, 244n50
 overload and, 162–164
 rural, 89–91
 scientific publishing and, 163–164
 Local service partners (LSPs), 90–91
 Logistics, 55–56, 74, 200, 224
 delivery services and, 57–60
 health issues and, 117–121
 timetables and, 57–60
 Loitering, 35
 Lomborg, Bjorn, 167
 London School of Economics, 99, 131, 139
 Long Now Foundation, 48
 Lovins, Amory, 11–12, 16, 23, 232–233n27
 Lovins, L. Hunter, 11–12, 16, 23, 232–233n27
 Løvlie, Lavrans, 220, 280n25
 Lowry, Glenn, 77
 Maas, Winy, 82
 McCullough, Malcolm, 83, 111

- McDonald's, 92
- McDonough, William, 25–26
- Maghreb Region, 55
- Magnetoencephalography (MEG), 203, 276n56
- Malaysia, 35
- Manifesta, 76
- Manzini, Ezio, 6, 19, 23, 41, 190, 219
- Map for Bikes and Birds, 167
- Mapping, 166
 - before-and-after knowledge maps and, 168
 - collaborative, 83–84
 - learning and, 132, 145–146
 - locality and, 82–84, 89, 93
- Marckmann, Frits, 207
- Marinetti, F. G., 174, 267n43
- Marketing, 161–162
 - context and, 73–75
 - knowledge workers and, 77–78
 - place development and, 74–75
- Markle Foundation, 256n32
- Mars mission, 221
- Martin Luther University, 53
- Marvin, Simon, 74
- Material input per service unit (MIPS), 53
- Material of Invention, The* (Manzini), 190
- Materials, 8, 187
 - aerogels, 193
 - air transport and, 52–53
 - automobiles and, 53–54
 - ceramics, 188, 190, 195
 - composites, 190
 - computer manufacturing and, 10–11
 - end-of-pipe approach and, 24
 - factor 20 and, 23
 - fibers, 190, 194, 197
 - flow of, 9–12
 - form-follows-function approach and, 196
 - growing economy and, 10
 - hidden history of, 12
 - high-speed trains and, 53
 - increased social burden of, 9–27
 - industrial waste and, 12
 - inefficiency and, 11–12
 - information technology and, 10–11
 - Kathalys and, 15–16
 - land use and, 13
 - leasing and, 18
 - lightness and, 191–196
 - MET matrix and, 13–14
 - nature and, 187–196, 272n17
 - paper use and, 11
 - process integration and, 189–193
 - properties of, 190, 192
 - recycling and, 14
 - silk, 188
 - telepresence and, 60–67
 - TNS Framework and, 16–17
 - transportation systems and, 52
 - weighting and, 13–14
- Matsushita, 2
- Mau, Bruce, 168
- Maxmin, James, 129–130
- Mayon-White, Bill, 99
- Meal porters, 40
- Meaning, 98, 109–111, 148–149
- Mediascapes, 83–86
 - communities of practice and, 131–133
 - cost and, 88, 90
 - design-free zones and, 94–95
 - development alternatives and, 89–91
 - downside of, 92–94
 - infrastructure and, 87–89
 - learning and, 139–141
 - literacy and, 181–184
 - proximity applications and, 86–87
 - resource ecologies and, 86–87
 - service ecologies and, 91–92
 - T-Vision and, 164
 - wireless graffiti and, 84–85
- Medical Nemesis* (Illich), 116–117

- Mentors, 151–152
- Merleau-Ponty, Maurice, 170–171
- MET matrix, 13–14
- Metronome, 49
- Microsoft, 151, 161, 172, 200
- Military, 163–166, 189, 254n12
- Mitleton-Kelly, Eve, 131
- MIT Media Lab, 60–62, 66–67, 179
- Miyake, Riiche, 182
- Mobile Bristol, 89
- Mobile phones, 9, 18, 37, 83, 158
 - learning and, 144–145
 - ticket purchasing and, 207
- Mobility, 30–31, 218
 - air traffic and, 52–53
 - automobiles and, 53–54
 - biking and, 72
 - chain approach and, 58
 - clock-face pulse timetabling and, 58
 - code-sharing tickets and, 57–58
 - commuting and, 54–55, 60
 - cost of, 52, 71–72, 239n1
 - delivery services and, 57–60
 - faster-to-closer approach and, 67–70
 - Fluid Time project and, 46–47
 - high-speed trains and, 53
 - importance of, 52–57
 - law of locality and, 70–71
 - logistics and, 55–57
 - measurement of, 60
 - ontological alienation and, 100–111
 - package delivery services and, 56–57
 - peer-to-peer decentralization and, 71
 - predict-and-provide policy and, 51–57
 - psychology of, 100–111
 - quality of life and, 51
 - railroad and, 32, 52
 - slow travel and, 38–39
 - speed and, 38–39, 242n24
 - substitution and, 51–52, 60–62
 - sustainability and, 51
 - telepresence and, 60–67
 - think-more-drive-less approach, 57–60
 - time literacy and, 48–49, 54
 - urban sprawl and, 54–55
 - virtual communication and, 62–67
 - walking and, 72
- Moore, Andrew, 119–120
- Morace, Francesco, 45–46
- Mori, Yoshiko, 76–77
- Mori Art Museum (MAM), 77
- Movable Realities* (Irie), 182
- Mumford, Lewis, 32
- MuniWireless.com, 88
- Murdoch, George P., 133–134
- Muse Conversation Menu, 181
- Muse Hotel, 152
- Music, 79, 172, 181
 - flow and, 211–212
 - jazz, 48
 - metronome and, 49
 - sound research and, 174–175
 - ragtime, 48
- Music for Airports* (Eno), 175
- Mussels, 188
- MVRDV, 81–83
- Napster, 69–71
- NASDAQ, 2
- National Aeronautics and Space
 - Administration (NASA), 53, 164, 221
- National Association of Allotment and Leisure Gardeners, 41
- National Health Service (U.K.), 121
- Natural capital, 232n26
- Natural Capitalism* (Hawken, Lovins, and Lovins), 11–12, 16, 23, 25
- Natural systems, 217
 - biomimetics and, 187–199
 - design in, 187–196, 272n17
 - energy and, 196–197
 - speed and, 31–32
- Natural time, 103–104
- Nature Ride, 19
- Negroponte, Nicholas, 60–61
- Neighbourhood Gardener, 222

- Nemawashi*, 43
 Netherlands Design Institute, 97–98, 271–272n15
 Netonomy, 207
 Netscape, 31, 38
 Networks, 42, 69, 111, 215–216
 ambient intelligence and, 204–209
 collapses of, 92–94
 conviviality and, 130–133
 decentralization and, 71
 embedded technologies and, 197–206, 273n32
 health issues and, 118–124
 law of locality and, 70–71
 learning, 143–144, 149–150, 156–157
 mediascapes and, 83–96
 open source, 222
 spatial planning and, 80–83
 telepresence and, 60–67
 Neurasthenia, 35–36
 Neuromag, 203, 274n55
 Nevejan, Caroline, 136, 145–146, 153, 259n3
 New domesticity, 45–46
 New York City Council, 88
 New York Museum of Modern Art, 77, 98, 190
 New York Public Library, 139
 New York University, 87, 223
 New York Wireless, 87
 Noise pollution, 175–176
 Nokia, 37, 87
 Nongovernmental organizations (NGOs), 90
 Norretranders, Tor, 62–63
 Norway, 59
 NOX, 192
 NS International, 207–208

 Oakley, Ann, 125
 Obesity, 72, 244–245n55
 Odin, 40
 Odin Theatre, 225

 Office clowns, 100
 Office design, 97–98, 100
 Olfactory interfaces, 177–180
 Olympics, 78
 OneTree project, 166
 Ongee people, 177–178
 Only to order (OTO), 56
 OpenCourseWare, 139
 Open Geospatial Consortium (OGC), 264–265n9
 Open Source Development Network, 222
 Orange, 220
 Organic produce, 40
 OroOro, 153–154
 Ota, Kayoko, 43
 Oticon, 201
 Overall, Robyn, 196
 Ownership, 6–7, 18–21
 Oxford Muse, The, 180–181, 228n10
 Oxford University, 152

 Pacione, Chris, 20–21
 Palo Alto Research Center (PARC), 191–192, 270n8
 Papanek, Victor, 1–2, 7
 Paper, 11
 Papert, Seymour, 139–140
Paradigm Shift (Tapscott), 36
 Patients, 275n50
 Pea roots, 196
 Peer-to-peer decentralization, 71
 Penguins, 185–186, 192, 271n14
 Personal area networks (PANs), 203
 Personal digital assistants (PDAs), 37
Pervasive Computing, 205
 Pharmaceutical companies, 114, 202–203
Phenomenology of Perception, The (Merleau-Ponty), 170
 Phitodepuration, 45–46
 Phonographs, 26
 Pirkel, James, 122

- Pitroda, Sam, 91, 249n51
- Plain old telephone service (POTS), 63
- Planetary Work Machine, 34
- Plans and Situated Actions* (Suchman), 105–106
- Plastics, 190, 197
- Plato, 172
- Playtime, 156–158
- Plummer, Henry, 103
- P.M., 34
- “Poetics of Light, The” (Plummer), 103
- Poetics of Telepresence, The, 63–64
- Polar bears, 192, 271n14
- Policy Studies Institute, 54
- Populate project, 62
- Porritt, Jonathon, 17
- Power of Now, The* (Ranadive), 37
- Power tools, 18–19, 87
- Prada, 76
- Prayer times, 33
- PRé, 13–14, 197
- Predict-and-provide policy, 51–57
- PRE-HIP, 115–116
- Prigogine, Ilya, 38
- Privacy, 3
- Proactive computing, 205
- Probe Research, 70
- Processor-in-memory (PIM), 70
- Productivity, 42. *See also* Speed
 city design and, 75–76
 feature drift and, 186–187
 logistics and, 55–57
 material/process integration and, 189–193
 RF tags and, 56
 transportation systems and, 52
- Product-service system, 19–21
- Project F, 45–46, 238n55, 238–239n56
- ProLogis, 242n24
- Promenade theater, 79
- Proxemics, 63–64
- Psychology, 34
 architecture and, 100–111
 computing and, 205
 health issues and, 114
 space and, 100–111
 speed and, 35–36
 systems-driven design and, 100–109
 telepresence and, 60–67
- Psychosocial computing, 205
- Public call offices (PCOs), 91
- Public relations, 77
- Quality time, 37–42
- Raby, Fiona, 63–64, 66
- Radio, 158, 186, 222
- Radio frequency (RF) tags, 56, 59
- Ragtime, 48
- Railroads, 3, 32, 52
 code-sharing tickets and, 57–58
 high-speed, 31, 39–40, 53, 58
 online ticketing and, 207–208
- Ranadive, Vivek, 37
- Raves, 79
- Real time, 36–37, 164–165, 191
 business and, 169
 mediascapes and, 83–96
 quality time and, 38–42
 response times and, 199
- Reason, Ben, 128
- Recycling, 14, 25
- Regional economic architecture (REA), 79–80
- Regionmaker, The, 81–82, 94, 247n22
- Reibstein, David, 138
- Reich, Robert, 77
- Reid, Jo, 89
- Reiner, Gary, 37, 168
- Religion, 33
- Renaissance, 217
- Research facilities, 188–189
- Response times, 199
- Reusable information object (RIO), 155
- Reverse-engineering, 43–44
- Rheingold, Howard, 129, 153

- RhineRuhrCity project, 82
- Rhythm, 44–45, 48–49, 173–177
- Rice University, 89
- Rieger, Matthias, 49–50
- Rifkin, Jeremy, 35, 44
- Rikkyo University, 144–145
- “Rocks to Rubble,” 230n15
- Roentgen, Konrad, 203
- Rokeby, David, 165
- Role-playing games, 151
- Roppongi Hills tower, 76–77
- Rozsak, Theodore, 26
- Royal College of Art, 85, 179
- Rubin, Benjamin, 175–176
- Rushkoff, Douglas, 156
- Russian Constructivists, 181
- Saarinen, Eero, 106
- Sachs, Wolfgang, 31–32
- St. Augustine, 170
- Saint-Exupéry, Antoine, 24–25
- St. Vincent’s Hospital, 109–111
- Schafer, R. Murray, 175
- Schiphol Airport, 105, 107–109, 252n19
- Schön, Donald, 106
- Schor, Juliet, 42
- Scientific Revolution, 217
- Sea cucumbers, 194
- Sea lilies, 194
- Sea urchins, 194
- SeeBeyond, 169
- Seely Brown, John, 141, 145–147
- Seen* (Rokeby), 165
- Seifried, D., 54
- Sennett, Richard, 103
- Serota, Nicholas, 77
- Services, 6–8, 224–225
 - decentralization and, 117–121, 130–131
 - delivery, 37, 56–60, 84
 - Fluid Time project and, 46–48
 - health care, 113–123 (*see also* Health issues)
 - human superiority and, 206–208
 - IVR, 207–208
 - kairological time and, 33
 - leasing and, 18
 - logistics and, 55–60, 74
 - mediascapes and, 86–87, 91–92
 - ownership and, 18–21
 - product-service system and, 19–21
 - resource ecologies and, 86–87
 - self-service economy and, 219–220
 - speed and, 36–38
 - sustainability and, 16–18
 - ticket purchasing and, 207
- Sesame Street*, 144
- Shahal Medical Services, 119
- Sharma, Yonmoy, 203
- Sharp, 173
- Shaw, Jeffrey, 182
- Shneiderman, Ben, 172
- Shopping, 76
- Short message system (SMS), 145, 207
- Siegele, Ludwig, 36–37, 168
- Silk, 188
- Simon, Herbert, 1–2
- Simplicity, 74
- Site-specific theater, 79
- Six Memos for a New Millenium* (Calvino), 26–27
- Skandia, 59
- Skeptical Environmentalist, The* (Lomborg), 167
- Slashdot, 153
- Slow food, 237–238n44
- Slow movements, 38–46
- Small and medium-sized enterprises (SMEs), 15
- Smart Architecture, 191–192
- Smart cards, 200–201
- Smart materials, 4
- Smart Mobs* (Rheingold), 153
- Smartness, 185
 - AI security and, 201
 - AmI and, 204–206

- Smartness (cont.)
- bio-mechatronics and, 201–203
 - complexity and, 195–196
 - copying and, 196–197
 - critical reflection and, 200–201
 - embedded systems and, 197–206
 - error-prone gadgets and, 197–198
 - feature drift and, 186–187
 - human superiority and, 206–208
 - learning and, 196–197
 - light structures and, 191–196
 - manufacturing complexity and, 188
 - material/process integration and, 189–193
 - nature and, 187–199
 - research facilities and, 188–189
 - smart skin and, 193–194
- Smart tags, 198
- Smart Textiles Network, 237n35
- Smell, 177–180
- Sociable Media Group, 66–67
- Social fiction, 219–220
- Social issues
- adaptation, 3
 - affluence's emptiness, 24
 - clocks, 32–38
 - communities of practice and, 131–133
 - context and, 73–96
 - conviviality and, 113–134
 - creative class and, 77–78
 - cultural evolution and, 30–31
 - demand-responsive systems, 6–7
 - downsizing, 124, 207
 - economic growth and, 9–10, 113
 - edge effect, 216–218
 - electrification, 199
 - embedded systems, 197–206
 - experience and, 78
 - factor 20 and, 23
 - Fluid Time project and, 46–47
 - garden effect, 46
 - global simultaneity and, 26
 - increased material burden, 9–27
 - information age and, 10
 - intellectual value, 43
 - knowledge workers and, 77–78
 - literacy and, 161–184
 - live performance and, 78–80
 - loitering and, 35
 - Long Now Foundation and, 48
 - marketing and, 74–75
 - mobility, 51–72
 - music, 48–49
 - nemawashi* and, 42–43
 - networks, 80–83
 - new domesticity, 45–46
 - office design and, 97–98, 100
 - ownership, 6–7, 18–21
 - place development, 74–77
 - population and, 5, 41
 - quality time and, 37–42
 - shopping and, 76
 - slow movements and, 38–41
 - sociability and, 35–36
 - social fiction and, 219–220
 - spectacle and, 75–77
 - speed, 29–49
 - sports, 78
 - suicide, 114
 - telepresence, 60–67
 - territorial capital and, 79–80
 - time literacy and, 48–49
 - trust and, 42
 - urban sprawl, 5, 54–55
 - waste, 161–162
- Social Life of Information, The* (Seely Brown and Duguid), 141, 145–147
- Society of the Spectacle, The* (Debord), 77
- Soft assets, 79–81
- Solomon, Debra, 40
- Sonic Hub, 83
- Sontag, Susan, 170, 183
- Sony, 151
- Sounding Object, 173, 267n38
- Sound research, 173–177, 182
- Sourceforge, 222

- Southwest Airlines, 56
- Soya Choupal, 90–91
- Space
 - acousmatic, 176
 - artificial, 100–111
 - colocation and, 69
 - context and, 73–96
 - decentralization and, 71
 - fakespace systems and, 66
 - flow and, 212–213
 - learning and, 146–148
 - marketing and, 73–75
 - meaning and, 109–111
 - mediascapes and, 83–86
 - networks and, 80–83
 - ontological alienation and, 100–111
 - place development and, 74–77
 - regional economic architecture and, 80
 - relationships and, 97–100
 - sound research and, 173–177
 - spectacle and, 75–80
 - splintering urbanism and, 74
 - systems-driven design and, 100–109
 - telepresence and, 60–67
 - theater and, 78–80
 - tourism and, 76–77
 - travel and, 100–103
 - urban sprawl and, 5, 54–55
- Space Station Freedom, 164
- Spark! conference, 93
- Sparse Area Communications, 91
- Special effects, 79
- Special rural development zones (SRDZs), 82–83
- Spectacle, 75–80
- Speech interfaces, 172–177
- Speed, 99–100, 215
 - acceleration and, 29–35, 38, 43–44, 200
 - always-on and, 37–38
 - AmI and, 204–206
 - carrying capacity and, 29
 - clocks and, 32–38
 - computers and, 68–70
 - cost of, 31–34, 37
 - cultural evolution and, 30–31, 35
 - design principles for, 43–44
 - digitization and, 36–37
 - ethics and, 35
 - feature bloat and, 29
 - Fluid Time project and, 46–47
 - fossil fuel use and, 31–32
 - informational footprint and, 30–31
 - information technology and, 36–38
 - law of locality and, 70–71
 - light-speed crisis and, 68
 - literacy of, 498–500
 - loitering and, 35
 - nature and, 31–32
 - nemawashi* and, 42–43
 - priority and, 38
 - Project F and, 45–46
 - psychosis from, 34–36
 - quality time and, 37–42
 - reverse-engineering and, 43–44
 - rhythm and, 44–45, 48–49
 - slow movements and, 38–45
 - sociability and, 35–36
 - time literacy and, 48–49
 - time scales and, 31–49
 - travel and, 30–32, 38–39
 - trust and, 42
 - Whirlpool Europe and, 45
- Spider silk, 188
- Splintering urbanism, 74
- Spohrer, Jim, 84
- Sports, 78
- Spreadsheets, 168–169
- Square Mile (London), 52
- Stalder, Felix, 222–223
- Stanford University, 173
- Starbucks, 92
- Starfish, 194
- Stealth, 94–95
- Sterling, Bruce, 22
- Storewidth paradigm, 68–69

- Storytelling, 161, 181
 Stress. *See* Complexity
 Suchman, Lucy, 105–106, 171
 Suicide, 114
 Sun Microsystems, 165
 Supply chain integration (SCI), 36, 56–57
Support Economy, The (Zuboff and Maxmin), 129–130
 Surrealists, 181
 Sustainability. *See also* Environmental issues
 building waste and, 192
 cities and, 75–76
 design and, 17–18
 mobility and, 51
 product-service system and, 19–21
 TNS Framework and, 16–17
 transportation systems and, 52
Sustainable Everyday: A Catalogue of Promising Solutions (Jégou and Manzini), 19
 Swedish Institute of Agricultural Sciences, 58–59
 Switzerland, 58
 Symbolic analysts, 77–78
 SysOps, 142–143, 209

 Tactile information, 177
 Tapscott, Don, 36
 Tate Gallery, 77
 Taub Urban Research Center, 69, 87
 Taxi systems, 86
 Technology, 98
 ambient intelligence and, 204–209
 bio-mechatronics and, 201–203
 clocks, 32–38
 computers, 4–5 (*see also* Computing)
 downsizing and, 207
 ecological footprint of, 10–11
 embedded, 197–206, 273n32
 fakespace systems and, 66
 feature drift and, 186–187
 Fluid Time project and, 46–48
 GPS, 24, 83–84, 90, 93, 242n26
 health issues and, 115–117
 homeland security, 200
 human superiority and, 206–208
 information, 10–11, 172–177 (*see also* Information technology; Internet)
 learning and, 149–150 (*see also* Learning)
 light-speed crisis and, 68–69
 mass, 3
 metronome, 49
 music and, 49
 NASDAQ and, 2
 olfactory interfaces and, 177–180
 ontological alienation and, 100–111
 patient issues and, 275n50
 productivity and, 42
 promises of, 3, 9, 123–124
 rebound effects of, 4–5
 as self-perpetuating system, 2–3
 speech interfaces and, 172–177
 speed and, 29–49
 tactile interfaces and, 177
 telegraph, 3, 26, 30
 telephones and, 3 (*see also* Telephones)
 telepresence and, 60–67
 television, 3, 85, 158
 ubiquitous computing and, 173–177
 undersea, 65
 WLL, 90
 TedMed, 115
Telecosm (Gilder), 11
 Telegraphs, 3, 26, 30
Telemedicine Glossary, 115
 Telenor, 59
 Telephones, 3, 5, 26, 131
 high rise buildings and, 83
 learning and, 144–145
 mobile phones, 9, 18, 37, 83, 144–145, 158, 207
 POTS and, 63
 productivity and, 42

- speed and, 30, 36
- ticket purchasing and, 207
- voice mail services, 19–20
- Telepistemology, 172, 177
- Teleshopping, 55
- Television, 3, 85, 158
- Telia, 20
- Temperature-sensing system, 66
- ten Holt, Simeon, 211–212
- Territorial capital, 79–83, 247n20
- Territory as interface, 85–86
- Terrorism, 93, 165, 200
- Text messaging, 145
- Teyler's Museum, 172
- Thackara's law, 187
- Thacker, Eugene, 3
- Theater, 78–80, 225
- The Natural Step, The (TNS) Framework, 16–17
- The Open Planning Project (TOPP), 81
- ThinkCycle, 222
- Thinking Machine computers, 61
- Thoreau, Henry David, 33
- Three Mile Island, 174
- Tikkun, 19
- Time, 31
 - acceleration and, 34–35
 - clocks and, 32–38
 - commuting and, 52–55, 60
 - event to time, 32–36
 - flexible schedules and, 261n33
 - fluid, 46–47
 - historical, 32–34
 - industry and, 32–49
 - jet lag, 34
 - literacy of, 48–49
 - loitering and, 35
 - natural, 103–104
 - nemawashi* and, 42–43
 - qualitative vs. quantitative, 33
 - real, 36–42, 83–96, 164–165, 169, 191, 199
 - response times and, 199
 - rhythm and, 44–45, 48–49, 173–177
 - slow movements and, 38–45
- Time Dollars, 126–128
- Time Machine, 174
- Timetables, 57–60
- Time Wars* (Rifkin), 44
- Tocqueville, Alexis de, 35
- Tollpost Globe, 59
- Toop, David, 175
- Tourism, 76–77, 237n40
- Townsend, Anthony, 70, 244n47
- Toxic chemicals, 10–11, 13, 165–166
- TPG, 56
- Train Grand Vitesse (TGV), 31
- Tramjatra project, 39
- Tramways, 39, 41
- Transparency, 104, 192–193
- Travel. *See* Mobility
- Tree adoption, 41
- Triple Bottom Line, 16
- TriSenx, 179
- Trompenaars, Alfons, 148
- Trucks, 9–10, 55, 58–59
- Trust, 42
- Tschumi, Bernard, 106
- T-Vision, 164–165
- Twelve Features of a Sustainable Society, 16
- Twigg, Carol, 145
- Ultima Online*, 151
- Unbundling, 124–125
- Understanding Computers and Cognition* (Winograd and Flores), 172
- UNext, 138, 259–260n13
- Unicorn Children's Theatre, 78–79
- Unisys, 169
- United Parcel Service (UPS), 56
- United States
 - business logistics cost and, 55
 - health issues and, 113–114, 121
 - homeland security and, 200
 - job quality and, 124

- United States (cont.)
 - learning costs and, 137–138
 - Library of Congress and, 163–164
- United Technologies, 154
- University of British Columbia, 12–13
- University of California, 171
- University of Chicago, 139
- University of Maryland, 140
- University of Michigan, 139
- University of Phoenix, 140, 260n21
- UN Studio, 108–109
- Urban gardens, 41
- Urban planning, 18, 215, 247n17
 - airports and, 100–103, 106–108
 - design-free zones and, 94–95
 - edge effect and, 216–218
 - mediascapes and, 83–96
 - MVRDV and, 81–83
 - networks and, 80–83
 - obesity and, 72, 244n55
 - ontological alienation and, 100–111
 - parks and, 87
 - public utilities and, 88
 - sound research and, 175–176
 - spatial design and, 75–83
 - sprawl and, 5, 54–55
- Urban Unlimited, 40
- Uricchio, William, 26
- USENIX (Advanced Computing Systems Association), 244n50
- U.S. Navy, 198
- Utilities, 88
- Utopia, 34

- Value chains, 42
- van Berkel, Ben, 108
- Vest, Charles, 139, 260n17
- Viacom Outdoors, 83
- Vincent, Julian, 190–191, 194–197
- Vinkenoog, Simon, 269n64
- Viruses, 93
- Visa, 30

- Vision on Sustainable Product Innovation* (Kathalys group), 16
- Vos, Esme, 88

- Waag Society, 84
- Wackernagel, Mathis, 231n17
- Walking, 72
- Wall Street Journal*, 42
- WalMart, 92
- Walt Disney Company, 100
- Warehouses, 57
- Waste, 161–162, 192, 230n9
- Wearable computers, 4, 21, 37, 116, 198, 203
- Weather, 10
- Websites, 78, 81, 88, 90, 130. *See also*
 - Internet
 - barter, 126–127
 - health issues, 116, 122–123
 - IDC, 229n5
 - learning, 138–141, 145, 153
 - open source, 222
 - productivity and, 42
 - scented, 179
 - travel, 207
- Weighting, 13–14
 - factors in, 15–17
 - faster-to-closer approach and, 67–70
 - load balancing and, 69
 - telepresence and, 60–67
 - visibility for, 22–24
- Weinstein, Michael, 203
- Wellness monitoring services, 21
- Wetware, 202
- Wharton Business School, 138
- Whirlpool Europe and, 45
- Whitelegg, John, 39, 54
- Whole-systems thinking, 16–17
- Wild City: Urban Genetics project, 94–95
- Wilkhahn, 224
- Wilson, Edward O., 30, 133, 216
- Wind, Jerry, 138
- Wind chimes, 176

- Winkler, Nicolaus, 49
Winnicott, David, 35, 103–104
Winograd, Terry, 172–173
Wireless Commons, 88
Wireless communication networks. *See*
 Mediascapes
Wireless graffiti, 84–85
Wireless local loop (WLL), 90
WISECARE, 115
Wood, 197
Woudhuysen, James, 208–209
Workspheres, 98
World Bank, 13, 154
WorldBoard, 84
World Economic Forum, 181
World Health Organization (WHO), 13,
 253n3
World Soundscape Project, 175
World Wildlife Fund, 13
Wurman, Richard Saul, 115
- Xerox, 191–192, 224
Xinhua, 201
X-rays, 203
- Zaccini, 49
Zeldin, Theodor, 4, 151–152, 180–181,
 213, 228n10
Zeroing out, 208–209
Zimmerman, Thomas, 202–203
Zoning laws, 5
Zuboff, Shoshana, 129–130
Zyra, 121