Index

Access issues, 53 Accuracy, 53, 57, 139 Accurate filtering, 50n2 Actancial model, 32 Active content creators, 109, 131, 158.159 Active survivor model, 3, 84 paradigm, 151 perspective, 153 Active-audience theories, 45 Activism, 90, 96, 103, 112 citizen, 159 digital, 105 online, 107 political, 83 Administrative cost, 128–129 Advisory tweet, 9, 10 Age of population, 30 Agency's communication, 32 'Alt-Left' movements, 132 'Alt-Right' movements, 132 Alternative media ecosystem, 132 'Alternative' theories, 133 Ambiguous attitude, 50 American Red Cross, 66, 100, 119, 125 Attention, 7, 41, 105 to audiences, 45 to dialogue, 154 public, 10 systematic, 155 Attention, Interest, Desire, Action (AIDA model), 41

Attitude, 67, 86, 158 broadcasting, 127 controversial, 16 of interviewees, 22 positive, 13 social, 51 Audience demographic perspectives, 55, 86 Audience-centric approaches, 123 - 124to crisis/disaster communication, 85-88 Audience-oriented approach, 83 Audiences, 82, 86 citizens as, 46–53 studies, 84, 112, 155 Automated natural language processing, 58 Automatic. See Automatico Automatic methods, 139 Automatic processing, 141 Automatico, 62 Bar-chart. 38 Barriers, 24-26 to collecting information

through social media, 147 to dissemination of information by social media, 30 to gathering information from social media, 141–149 limitations and barriers to social media adoption, 12–14 Behaviour, 6, 7, 45, 54, 67, 70 - 71.100citizens needs and, 46-49 communication, 119 user communicative, 96 Behavioural response, 47 Benchmarking process, 62 Bio box, 39, 43 Black-or-white approach, 16 Blog, 11 Blood pressure, 42 Borkin's model, 42 Bottom-up communication practices, 105, 108-110 Bottom-up information, 114 activities performed through social media, 145 automated techniques to overcome misleading content and information overload, 138-141 barriers to collecting information through social media, 147 barriers to gathering information from social media, 141-149 broadcasting attitude, 127 - 128citizen-generated information, 124 - 125citizen-generated information and situational awareness, 134-138 to digital volunteers, 81-121 emergency services, 125-127 networked model, 123-124 perceived usefulness of different technological features. 148 from social media, 123

social media barriers for gathering information, 128 - 134See also Top-down information Bottom-up information sharing, 157 Bottom-up process, 1, 2, 81 Breakout, 39, 43 Brochures, 21 Cause-effect nexus, 38-39 Central-level institutions, 156 Centro Italia' 2016 seismic sequence, 133 Channel effect, 54 Citizen(s), 84, 161 activism, 159 as audiences, 1, 46 citizen-generated information, 121, 123, 124-125, 129, 134 - 138communication, 45-46 Italian National Survey on users information-seeking practices. 66-79 needs and behaviour, 46-49 quali-quantitative study on user comprehension of earthquake-related tweets, 57 - 66redefinition of communication model, 53-57 relational networks, 45 for top-down information, 49 - 53Civic agency, 91 Closures tweet, 9 Co-creational framework, 87 Co-production landscape, 127 Collaborative reporting system, 106

Collective coping strategies, 87, 96.108 Collective sensemaking, 96 Colorado Flash Floods (2013), 11 Command and control model, 3, 84, 126, 153 Common-based peer production, 93 Common/technical language, 61 Communication, 7, 20, 48-49 channels, 20 dynamics, 3 with personal networks, 96 practice, 52 process, 124, 159 redefinition of communication model. 53-57 research, 151 scientific information within digital media environment, 14 - 17theory, 45 See also Crisis communication Communicative activation, 73 Communicative ecosystem, 15 of Italian Internet, 73-74 Communicative environment, 17, 121 Communicative processes, 81 Community-based phenomena, 84-85 Community-centric event, 85 Complex social agents, 136-137 Computational methods, 139 Confidence gap, 17 'Connected action' framework to participatory cultures, 90 - 93Consolidation, 14 Conspiracy theories, 132, 133 Constraint recognition, 86

Contemporary media ecologies, 131 Contemporary societies, 89 Convenience, 97 Convergence culture, 85 Conversation-monitoring tools, 26 Conversational microstructure elements. 9 Conversational nature of social media, 5 Convincing theoretical framework, 55 Correction tweet, 9 Crafting of effective warnings message, 6, 14, 53, 57, 153 Crisis communication, 3, 49, 50n1, 81, 84, 152, 155 scholars, 84 theory, 98 See also Communication Crisis informatics, 3, 81-82 Crisis/disaster communication audience-centric approaches to, 85 - 88theories, 83 Crowdmaps, 103 Crowdsourcing, 92-93, 124-125, 140 - 141Cultural considerations, 3, 129, 130 Culture convergence, 85 of individualism, 89 participatory, 92 'Culture, value and norms perspective', 55, 86 Dati preliminari, 62 Deficit model, 15

Diagrams, 43

Dialogic communication theory, 87 Digital divide, 52, 53 Digital environment, 86, 93, 108 Digital journalism, 37 Digital literacy, 52, 53 Digital media, 21, 85, 91, 92, 151 communicating scientific information within digital media environment, 14 - 17ecosystem, 105 networks, 92 platforms, 105, 110 See also Social media Digital mourning, 108 Digital skills, 52, 53 Digital volunteering, 83, 90 Digital volunteers, 87, 98, 107 activities, 106 bottom-up information to, 81 - 121practices of, 110 Digitalisation, 15 Disaster, 47, 49, 138, 139 disaster-related content, 103 magnitude determination, 97 management, 47, 126 media representation of, 50n1 reasons for not using social media in. 52-53research, 152 title hashtag, 138 types, 101-102 See also Earthquakes Disaster communication, 49, 81, 92, 151 - 153scholarship, 93-94 social media platforms in, 110-112 Discrete crisis-related-affect perspectives, 87

Discursive/schematic format, 61 Disinformation, 17, 23, 131 Disinformation propagated through misinformation, 131 Disintermediation process, 15, 91 Disseminating effective warning messages, 6-7 Earthquake Alert and Report System (EARS), 141 Earthquake operational forecasting (EOF), 102n1 Earthquake(s), 41, 47, 48, 102 early warning system, 14n1 earthquake-related communication practices, 14 earthquake-related domain, 136 Italian citizens sharing practices in, 118-121 magnitude, 59 quali-quantitative study on user comprehension of earthquake-related tweets, 57 - 66Easiness effect, 16 Echo chambers effect, 17, 131 Effective warning, 47 crafting, 57, 66 disseminating effective warning messages, 6-7Effective warnings message crafting of, 6, 14, 53, 57, 153 Email, 20, 105 Emergency, 135 activities performed through social media, 145 communication, 152 communicators, 130 management, 84, 143 managers, 22-23, 24, 130, 139

response hashtag, 138 services, 126 Emergency response hashtag, 138 Emergency situations, 137, 139, 160 analysis of institutions' communicative practices, 5 - 6barriers to social media adoption, 24 institutions communicative practices, 7-11 study of people's sense-giving processes, 153 Emergent Norm Theory, 53 Emilia 2012 seismic sequence, tweeting in, 112–118 Emotional sharing to networked volunteers, 95 bottom-up communication practices, 108-110 information content, 99 information producing and sharing, 100-103 making sense of world through words, 103–108 motivations for social media, 96-97 review of relevant empirical studies, 98-99 social media platforms in disaster communication, 110 - 112top-down communication, 95 - 96Emotional support, 87 finding, 96, 97 Emotions, 107-108 emotion-driven perspective, 87 prevailing, 117-118 publics, 87

Empowerment, 91 Engagement, 91 Enthusiasm, 13 Esoteric community, 16 Evacuation tweet, 9 Event, 43, 51 Execution, 65 Eyewitness information production, 100 tweets, 135 Face-to-face communication, 48, Facebook, 1, 11, 20, 21, 58, 103, 112, 143, 144 Fake news, 129 False information, 130 Feelings, 107-108 Fema, 43 Filter bubbles, 17 'First-hand information' tweets, 118 Flow charts, 41, 43 Fly-sheets, 21 Forecasting, 65 earthquake, 63n5 Formal skills, 52–53 Fragmentation, 18 Free-source software development, 93 Fukushima nuclear reactor crisis, 54 Functionalistic approach, 96 Geo-localisation services, 26 Geographic spread, 138 Geolocalised tweets, 113, 114 Geophysical agencies, 31–32, 42 Geophysics, 45–46 Google Docs, 103

Google Plus, 144

Grassroots communication. 94 communities, 85 information filtering activities, 58 Gratification approach, 45, 56 'Greimas' theory, 32, 33, 36 Haiti earthquake, 58, 105-106, 113.132-133 Hashtags, 138 Hazard(s) impact tweet, 9 paradigm, 152 warning, 46 Human intelligence, 141 as sensors, 82 Humour, 52, 97 Hurricane Katrina, 107 Hurricane Sandy (2012), 57 Hybrid communicative subjects, 15 Hybrid crowdsensing, 141

ICT

in emergency response, 154 supported public participation, 154 Inaccurate information, 130 Incident Management Team (IMT), 11 Individual coping strategies, 96 Individualism culture. 89 networked, 88 Individualized collective actions, 90 Influential social media creators. 109 Infographics, 37 formal definition and models, 37 - 40

lack of interactivity, 44 and pragmatic information, 42 - 44and scientific information, 40 - 42See also Social media; Twitter Information, 111 credibility, 140 creator and propagator, 130-131 forms, 54 information-related citizen activities. 83 information-seeking activities, 45, 48-49 producing and sharing, 100-103 seeking and sharing, 96 sharing, 2 skills, 52, 53 tweet, 9 Information gathering, 2 practices, 144 processes, 100 and sharing, 96 Information overload, automated techniques to overcome misleading content and, 138-141 'Informative' messages, 99 Instagram, 20 Institutional communication, 21 attention to behaviour and strategies, 7 initiatives, 46 practices. 5 on social media, 18-19 strategy, 6, 32 Institutional messages, 66 Institutionalisation, 14 Institutions, 21–22, 26, 130 communication objectives, 56

communicative practices in emergency situations, 7 - 11European, 10-11 Italian, 19 scientific, 15, 17 social media by, 6 Instrumental approach, 9 Integrated social media strategy, Interactivity, lack of, 44 International time format (UTC), 64 Internet, 131 revolution, 88 studies, 84, 93 Interpersonal communication channels, 110 Interpersonal communicationrelated skills, 52-53 Interpretations, 86 Interviewees, 20, 25 Involvement level, 86 Istituto Nazionale di Geofisica e Vulcanologia (INGV), 15, 58, 133 geophysical agencies, 31-32 presentation on website, 32 - 34quali-quantitative study on user comprehension of earthquake-related tweets, 57 - 66and USGS communication strategies on web, 31 USGS presentation on website, 34 - 36Italian citizens sharing practices in earthquake, 118-121 Italian civil protection system, 19, 142

Italian Geophysical Agency. See Istituto Nazionale di Geofisica e Vulcanologia (INGV) Italian local-level institutions social media qualitative study, 18-20 quantitative study, 26-31 Italian National Institute of Geophysics and Volcanology. See Istituto Nazionale di Geofisica e Vulcanologia (INGV) **Italian National Statistics** Institution, 141 Italian National Survey on users information-seeking practices, 66-79 Italy, local-level emergency managers in, 141-149

Japanese Meteorological Agency (JMA), 15, 33 Joint effects, 55–56, 157

Knowledge, 33 black-or-white approach to, 16 communication of scientific, 15 deficiencies, 53 pragmatic, 42

L'Aquila seismic sequence case, 104 Language, 20 common/technical, 61 figurative, 38 verbal, 38 Large scale emergency response, 154–155 Laypeople, 16, 153 Legislative barriers, 25 Levity, 52, 97 Line-chart, 38 Linear communication model, 5, 151 Linear process, 151 Local representatives for emergency management, 23 Local-level emergency management, 3 Local-level institutions, 18, 21, 156 London Metropolitan Police Twitter communication, 9 Macroseismic intensity data, earthquake-related domain, 136 Mainstream platforms, 68–69 Man-made disasters, 15 Mass media system, 129 Mayor, 142 Media ecological approach, 94 organisations, 58 representation of disasters, 50n1 scholars, 56 studies, 83 Media ideologies, 56, 111 from 'connected action' framework to, 90-93 relating to idioms of practice, 95 Mercedes crisis, 54 Message, 55-56 comprehension of institutional, 56 encoding and decoding mass media, 56 parsing brief and informal, 136 text, 72 warning, 6

Meteorological Service Act, 34 Military management processes, 153 Milling, 53, 101 e-milling, 66, 153 process, 153 Ministry of Land, Infrastructure, Transport and Tourism (Mlit), 34 Misinformation, 17, 130-134 propagated through disinformation, 131 Misleading content, automated techniques to overcome, 138 - 141Misleading information, 130-131 Monochromatic model, 42 Multi-platform approach, 103, 156 Narration aspect, 34 style, 20, 23 Narrative Program, 32-33, 36 'Research', 35 Narratological model, 32 Natural disaster(s), 15, 46, 81 infographics and, 37-44 social media activity, 95-112 Network society, 90 Networked Crisis Communication Model (NCCM), 55, 86, 88 Networked environment, 93 Networked individualism, 88, 90 operating system, 2, 89, 90, 155 Networked model, 1, 2, 81-85, 123 - 124activities performed through social media, 145 audience-centric approaches to crisis/disaster communication, 85-88

automated techniques, 138 - 141barriers to collecting information through social media, 147 barriers to gathering information from social media, 141-149 citizen-generated information and situational awareness, 134 - 138from 'connected action' framework to participatory cultures and 'media ideologies', 90-93 from emotional sharing to networked volunteers. 95 - 112exploring affordances and constraints of social media platforms, 93-95 Italian citizens sharing practices in earthquake, 118-121 new social operating system, 88 - 90perceived usefulness of different technological features, 148 social media barriers for gathering information, 128 - 134tweeting in Emilia 2012 seismic sequence, 112-118 Networked sociability model, 88 Networked volunteers, emotional sharing to, 95-112 New social operating system, 88 - 90Nixle, 11 Non-emergency information, 138

'Non-Firehose' assessment, 114n3 Non-informative phenomenon, 139 Non-profit organisations, 58 'Not informative' messages, 99 Numeric code, 65 Off-topic tweet, 9, 10, 98, 99 'On-topic' tweets, 98, 99 One-way information, 83 Online communication networks, Online filtering algorithms, 131 Online information sources, 68 Open-peer production communities, 92 Open-source software development, 93 Operational skills, 52, 53 Operators' desiderata, 26 Optimistic approach, 16 Ordinary users, 115 Organisation-based adverse events, 85 Organisational barriers, 25 'Original tweet/retweet' ratio, 157 - 158

Participatory cultures from 'connected action' framework to, 90–93 literature on, 108–109, 158 Passive audience, 83, 151 People's relational network, 48 Personal interaction, 131 Personal recommendations, 97 Personal social networks, 53 Personal/political communication, 21 Physical proximity, 48, 103 Polymedia, 56, 95 Popularisation of science, 16 Posters. 21 Practical-professional approach, 25 attitude, 22, 23, 24 narration style, 20 Practices-sharing information, 100 Pragmatic approach, 36 Pragmatic information, 42-44 Preliminare, 62 Preliminary. See Preliminare Preliminary data. See Dati preliminary Preliminary estimate. See Stima preliminare Privacy and security fears, 53 Problem recognition, 86 Process diagrams, 41 Propagator, 131 Provisional estimate. See Stima provvisoria Pseudo-science, 133 Public administrations, 127 Public attention, 10 Public communication, 127, 128, 158 domain, 158 literature, 123, 124-125, 126 Public debate, 6, 16, 17 Public Information Officers (PIO), 12 Public institutions, 26, 33, 101, 104, 126, 127, 141-142, 163 Public participation, 127 Public reporting hashtag, 138 Public(s) coping strategy, 87 Publics' emotions and coping, 87 Pure disinformation, 131 Pure misinformation, 131

Quali-quantitative approach, 10 study on user comprehension of earthquake-related tweets, 57-66 Qualitative study of Italian local-level institutions social media, 18-20Quantitative study of Italian local-level institutions social media, 26-31 Quasi-Twitter celebrity, 116 Queensland floods, 98, 101 Rainbow scheme, 42 Rational-Adaptive Model, 47 - 48Real-time nature of social media. 49 'Real' world, 106 Reception studies approach, 56 Resilience, 35, 108 Respondents age, 28 evaluation of information sources speed, 76-77 geographical origins, 29 level of education, 28 perceptions, 146 year of service, 29 Retweet, 9, 10, 117-118 Retweeters, 110 Rhetorical device, 46 Rumours, 130–134 Saturation, 42 'Savoir-faire', 42 'Savoir', 40, 42

Scholars, 1, 48, 101, 129, 131, 135, 139–141 barriers to extensive social media usage, 124

classifications for users. 109 - 110crisis communication, 84-85 crisis informatics, 82 disaster communication, 82, 85, 93 - 94experimented with social-sensing processes, 135 extracting relevant information from social media, 139 importance of sharing feelings and emotions, 107 institutions and emergency managers rely on social media, 125 Internet. 82 internet, 82-83, 155 media, 56 role of citizen-generated information, 136 role or potential of social media in enhancing situational awareness, 134 social media, 82–83 taxonomies, 98 Scholarship on disaster communication, 151 growing body of, 96 social media disaster-related scholarship, 110 social media scholarship, 111 Science communication, 3, 15 confidence gap, 17 relationship with society and, 17 Scientific information, infographics and, 40-42 Scientific institutions, 17 Scientific popularisations, 15–16

Second-hand reporting, 8–9 Seismic Italian National Survey on users information-seeking practices in seismic event, 66 - 79networks, 114, 136 risk, 41 Self-mobilising tool, 51 Self-reliant stakeholders, 46 Sense of community, 97 Sense-making processes, 87 of world through words, 103 - 108Sentiment, 135 ShakeAlert, 14n1 Situational awareness, 134–138 Situational Crisis Communication Theory (SCCT), 86 Situational Theory of Publics, 86 Skype, 105 Social attitude, 51 Social Breakdown Model, 48 Social media, 1, 3, 5, 7, 8, 10–11, 17, 53, 54, 85, 131, 134, 146, 160 activities, 90, 145 barriers, 24-26, 128-134 classification in emergency situation, 51 communication practices, 49 credibility, 140 in disaster communication, 110 - 112emergency communication, 142 emergency managers, 22-23 exploring affordances and constraints of, 93-95 followers, 110 inactives, 110

information. 46 limitations and barriers to adoption, 12-14at local level, 22 in natural disaster, 95-112 news feeds, 131 operators desiderata, 26 platforms, 110, 143, 144 potential risk, 50-51 scholarship, 111 screening practices, 135 of user. 81 See also Infographics Social mediated crisis communication model, 87 Social network, 88–89 analysis approach, 160 revolution, 88 Social norms, 97 Social support, 87 Social vulnerability, 152 Social-Mediated Crisis Communication Model (SMCC), 54 Social-sensing processes, 135 Society, 17, 88-89 Socio-behavioural phenomena, 151 Socio-political ecology perspective, 152 Sociological approach, 47 Sociology of disaster, 3, 84 Spectacular style, 61 Spontaneism, 31 Stakeholders, 31-32 Stealing thunder effect, 50, 54 Stima preliminare, 62, 65 Stima provvisoria, 62, 65 Strategic skills, 52 Subscriber-based notification service, 11

Sympathy and emotional support, 99 Syncretic texts, 39 System theory approach, 7, 47 Systematic analysis, 9 'Task-oriented' approach, 90 Technical resources, lack of, 24 Technological barriers, 146 Technological determinism, 83-84 Technology-oriented dimensions, 52 Terse messages, 10 Text messages, 20 Text-oriented risk, 45 Therapeutic sharing, 108 Timely information, 49, 50, 116 Top-down communication, 26, 95 - 96Top-down information, 45, 156 citizens as audiences for, 49, 56 information seeking, 49-50 potential risk of social media, 50 - 51reasons for not using social media in disasters, 52-53 sharing, 1, 156 social media in emergency situation, 51-52Top-down information dissemination strategies, 5, 12 communicating scientific information within digital media environment, 14–17 communication channels, 20 disseminating effective warning messages, 6-7 disseminating top-down information at local level, 21 - 22

infographics and natural disasters. 37-44 INGV and USGS communication strategies on web, 31-37 institutional communication practices, 5-6 institutions communicative practices in emergency situations, 7-11 limitations and barriers to social media adoption, 12 - 14policies type for, 31 qualitative study of Italian local-level institutions social media, 18–20 quantitative study of Italian local-level institutions social media, 26-31 social media at local level, 22 - 26two different and alternative strategies, 36-37 Top-down process, 1, 2, 81 Top-down social media information. 55 Traditional command and control model, 153, 154 - 155Traditional communication channels, 21 Traditional media, 54 Traditional model, 1-2, 88, 100 Traditional rainbow scheme, 42 Transformation rule, 38 Tweet, 63n5 content, 116 syntax, 60, 63, 64 types, 9 Tweet/retweet ratio, 100–101

Tweeting in Emilia 2012 seismic sequence, 112-118 Twitter, 11, 20, 58, 98, 103, 105, 112, 139 celebrities, 121 datasets, 109, 135 metrics. 100 twitter-based earthquake detector, 136 user activity, 81 See also Social media Twitter celebrities, 116 Twitter Streaming API, 114 Two-way cocreational approaches, 87 Two-way communication, 8 environment, 82, 83 Two-way flow of communication, 48

Unfiltered information, 97 Unique information, 49, 97 United Nations Office for Coordination of Humanitarian Affairs (UNOCHA), 137–138 US USGS, 15 Use experiences, 86 User communication processes, 96 User-centric approach, 100 Users information-seeking practices behaviour, 67-68, 70-71 channels trustworthiness, 75 - 76communication, 78-79 communicative ecosystem of Italian Internet, 73-74 earthquake, 69 Italian Internet, 72–73 Italian National Survey on, 66

respondents evaluation of information sources speed, 76 - 77seismic event, 68-69 sharing information, 71-72 trustworthiness, 74-75 user experience, 66–67 'Uses and Gratification' approach, 8 USGS communication strategies on web, 31 geophysical agencies, 31-32 INGV presentation on website, 32 - 34USGS presentation on website, 34 - 36Ushahidi platform, 106, 139 Verbal text, 43 Virtual operations support teams

(VOSTs), 106, 146–147

'Virtual' world, 106
Volcanology, 33, 45–46, 56, 58–59
Warning messages, disseminating effective, 6–7
Warning system, 47
Web, INGV and USGS communication strategies on, 31 geophysical agencies, 31–32
INGV presentation on website, 32–34
USGS presentation on website, 34–36
Whats Arm 20, 120

WhatsApp, 20, 120 See also Social media

Witnessing function, 118, 121

Word-of-mouth communication, 54