

References

Chapter 1

- MIC “Study Group on the Utilization of Metaverse Towards Web3 Era” materials

Chapter 2

- Ericsson “Ericsson Mobility Visualizer”
- Japan External Trade Organization (JETRO) (Aug. 2, 2022) “The data environment is now (worldwide) - A look at cross-border data flows, investment and trade rules”
- MIC (2020) “Survey Research on Consumer Awareness of the Data Distribution Environment”
- MIC (2023) “Survey Research on R&D on the Latest Information and Communications Technologies and Trends of Use of Digital Technologies in Japan and Abroad”
- Medical Data Vision Co., Ltd. “AWS Utilization Cases of MDV with Largest RWD in Japan”
- SANDVNE “PHENOMENA (THE GLOBAL INTERNET PHENOMENA REPORT JANUARY 2023)”
- Statista “Most popular multi-platform web properties in the United States in July 2022, based on number of unique visitors”
- Security.org “The Data Big Tech Companies Have On You”
- Data provided by Statista
- Fair Trade Commission “Antimonopoly Act Approach Involving Abuse of Superior Status in Transactions between Digital Platform Operators and Consumers Providing Personal Information”
- Cabinet Secretariat, Headquarters for Digital Market Competition Secretariat “Digital Market Competition Conference” materials
- MIC (2023) “Survey Research on the Advancement of ICT Infrastructure and Distribution of Digital Data and Information”
- PwC Japan “Support for China's Cybersecurity Law, Data Security Law, and Personal Information Protection Law”
- JETRO “The New Act on the Protection of Personal Information Is to Be Enforced Starting November 1”
- Fujio Toriumi and Tatsuhiko Yamamoto (2022) “How to Face the Digital Space: Realizing Informational Health” (Nikkei Premium Series)
- Fujio Toriumi and Tatsuhiko Yamamoto (2022) “Toward a Sound Speech Platform - Digital Diet Statement Ver. 1.0”
- Cass R. Sunstein (2001) “Is the Internet the Enemy of Democracy?”
- MIC “Platform Service Study Group” materials
- MIC “Fiscal 2021 Survey on Disinformation Awareness in Japan and Other Countries”
- Shinichi Yamaguchi (2023) MIC “General Policy Committee” materials
- Shinichi Yamaguchi (2023) MIC “Platform Service Study Group” materials
- GLOCOM Innovation-Nippon Report (April 2022) “Understanding the Reality of False Information and Misinformation in Japan and Examining Social Countermeasures — Empirical Analysis of False Information and Misinformation Regarding Politics and Coronavirus Vaccines, etc.”
- MIC “Report on the Survey on the Current Status and Issues of Measures for Improving Media Information Literacy”
- NII (2023) “SYNTHETIQ VISION Used to Detect Deepfake Images - The First Practical Application in Japan to Automatically Determine the Authenticity of Fake Facial Images”
- McAfee Japan (2020) “McAfee Launches Deepfakes Lab to Eliminate Election Fakes”
- Microsoft “New Steps to Combat Misinformation”
- Originator Profile Collaborative Innovation Partnership (2023) “New Members Join Originator Profile Collaborative Innovation Partnership”
- UK Government (2022) “Guide to the Online Safety Bill”
- G7 “Digital Minister's Declaration” (2022)
- G7 “Resilient Democracies Statement” (2022)
- G7 “Digital and Tech Ministers' Declaration” (2023)
- OECD “Declaration on a 'Trusted, Sustainable and Inclusive Digital Future” (2022)

Chapter 3

- MIC “Study Group on the Utilization of Metaverse Towards Web3 Era” materials
- MIC “Information and Communications Technology Strategy for Beyond 5G” (summary of interim report)
- METI “Industrial Structure Council, Economic and Industrial Policy Innovation Committee” materials
- Chiba Institute of Technology (2022) “Chiba Institute of Technology First in Japan to Use NFTs to Issue Certificate of Academic History at - Helping to Produce Global Human Resources in Anticipation of Web 3.0”
- Digital Agency “Web3.0 Study Group Report”
- Shiwa, Iwate Prefecture (2022) Digital Agency “Web3.0 Study Group” materials
- MIC (2023) “Survey Research on the Advancement of ICT Infrastructure and Distribution of Digital Data and Information”
- MIC “Study Group on the Utilization of Metaverse Towards Web3 Era” (interim summary)
- “Basic Policy on Economic and Fiscal Management and Reform 2022” (approved by the Cabinet on June 7, 2022)
- Intellectual Property Strategy Headquarters (2022) “Intellectual Property Promotion Plan 2022”
- Shanghai City (2022) “Shanghai Harnessing 'Digital Twin' Technology to Improve City Management”
- Microsoft (2023) “Confirmed: the new Bing runs on OpenAI's GPT-4”
- SEQUOIA (2022) “Generative AI: A Creative New World”
- National Telecommunications and Information Administration (2023) “AI Accountability Policy Request for Comment”
- JETRO (2023) “Biden Administration Announces New Measures To Promote Responsible AI Innovation”
- EU (2023) “EDPB resolves dispute on transfers by Meta and creates task force on Chat GPT”
- G7 “Digital and Tech Ministers' Declaration” (2023)

- G7 “Hiroshima Summit Communique” (2023)
- METI (2022) “Council of Experts on Economic Security Legislation and Review Committee on Core Infrastructure” materials
- MIC (2022) “Research Study on Ensuring the Economic Security of Digital Society”
- MIC (2022) “Study Group on Intercarrier Roaming in Emergency Situations” materials
- MIC (2022) “Study Group on Intercarrier Roaming in Emergency Situations” (first report)
- KDDI (2023) “New Easy-to-Use Auxiliary Line Service Now Available”
- SoftBank (2023) “SoftBank to Launch Auxiliary Line Service Compatible with au on April 12”
- Tokyo (2023) “Connected Tokyo - New Initiatives of the Connected Tokyo Promotion Division for Fiscal 2023”
- MIT Technology Review “How Many Weeks to Recover from the Tongan Eruption? Internet Vulnerabilities Revealed”
- Japan IGF “What is the IGF?”
- Yasuhiko Taniwaki (2022) “National Sovereignty and Cyber Sovereignty on the Internet”
- “WEAPONS OF CONTROL, SHIELDS OF IMPUNITY”
- “Declaration for the Future of the Internet” (2022)

Chapter 4

- Data provided by Statista
- Gartner press release (February 27, 2023) “Gartner Predicts 4.7% Growth in Enterprise IT Spending in Japan in 2023”
- MIC (2023) “Survey on Economic Analysis of ICT in Fiscal 2022”
- MIC “ICT Inter-Industry Table” (for each fiscal year)
- MIC “2022 Science and Technology Research Survey”
- MIC “Science and Technology Research Survey” for each fiscal year
- Center for Research and Development Strategy, Japan Science and Technology Agency “Comprehensive Report on Research and Development (2022)”
- MEXT National Institute of Science and Technology Policy “Science and Technology Indicators 2022”
- Japan Patent Office “Recent Trends in Business-Related Inventions”
- Japan Patent Office (2022) “Fiscal 2022 Summary of Results of Investigation of Applications for AI-Related Inventions”
- Ricoh Institute of Sustainability and Business (2022) “Data Center Energy Saving: What is Photoelectric Fusion?”
- MIC “2022 Basic Survey on the Information and Communications Industry”
- MIC “Information and Communications Statistics Database”
- MIC “Broadband Infrastructure Development Survey for End of Fiscal 2021”
- OECD Broadband statistics
- MIC (2023) “Results of Aggregating Internet Traffic in Japan (for November 2022)”
- MIC “Quarterly data on the Number and Share of Telecommunications Services Subscriptions (Third Quarter of Fiscal 2022 [End of December])”
- MIC “FY2022 Survey on Domestic-Overseas Price Difference of Telecommunication Service”
- MIC “Voice Communication Usage in Japan by Communication Volume (Fiscal 2021)”
- MIC “Telecommunications Service Accidents (Fiscal 2021)”
- MIC “Regular Meeting for Monitoring Consumer Protection Rules and ICT Service Reliability” materials
- IDC “Japan Virtual Client Computing Market Share” (July 6, 2022)
- GSMA(2023) “Industry moves to execute on open RAN potential”
- Orange (2023) “Major European operators accelerate progress on Open RAN maturity, security and energy efficiency”
- Vodafone “Vodafone’s first Open RAN sites deliver better connectivity in busy seaside towns”
- Japan OTIC (2022) “Japan OTIC Established in Yokosuka as a Testing and Certification Site for Base Stations and Other Devices Based on International Standards Established by the O-RAN ALLIANCE”
- NTT DOCOMO (2023) “DOCOMO Now Supports Five Overseas Telecom Operators in Open RAN Efforts”
- Rakuten Group (fiscal 2022) financial results
- Nippon Telegraph and Telephone Corporation “NTT and SKY Perfect JSAT Reach Decision to Establish Space Compass, Inc.”
- MIC “Income and Expenditures of Private Broadcasters” and NHK “Financial Statements” for each fiscal year
- Dentsu “Advertising Expenses in Japan”
- MIC “Income and Expenditures of Private Broadcasters” for each fiscal year
- MIC “Current State of Cable Television”
- Japan Electronics and Information Technology Industries Association materials, Japan Cable Laboratories materials, NHK materials, and MIC materials (“Current State of Satellite Broadcasting” and “Current State of Cable Television”)
- MIC “Broadcast Suspension Accidents” (fiscal 2021)
- MIC Institute for Information and Communications Policy “Survey on Media/Software Production and Distribution”
- Dentsu Group “Global Advertisement Spend Growth Rate Forecast (2022-2025)”
- Dentsu “Knowledge & Data: Advertising Costs in Japan in 2022”
- MIC “Analysis of Current State of Overseas Expansion of Broadcast Content” (for each fiscal year)
- Data provided by Omdia
- METI “Production Dynamics Statistics Survey: Machine Statistics”
- Yano Research Institute Ltd., “Global Market of Mobile Phone Subscriptions and Shipment Volume: Key Research Findings 2022”, February 7, 2023
- CIAJ “Medium-Term Demand Forecast for Communications Devices [Fiscal 2022 to Fiscal 2027]”
- Fuji Chimera Research Institute, Inc. “5G/8K business future outlook survey 2022”
- JEITA “Domestic Shipments of Consumer Electronic Devices”

- Yano Research Institute Ltd., “The Market of HMDs (Head Mounted Displays) for XR (VR/AR/MR) and 360-Degree Videos: Key Research Findings 2021” , May 11, 2022
- UNCTAD “UNCTAD STAT”
- Wright Investors' Service, Inc “Corporate Information”
- IPA “DX White Paper 2023”
- MIC “Second Summary of the Platform Service Study Group”
- GEM Partners “Video Streaming (VOD) Market Five-Year Forecast (2023-2027) Report”
- Recording Industry Association of Japan “Japanese Recording Industry 2023”
- All Japan Magazine and Book Publisher's and Editor's Association, Research Institute for Scientific Publications (2023) “Monthly Publishing Report”
- Yano Research Institute Ltd., “Location and Geographic Information Service Market in Japan: Key Research Findings 2020” , November 5, 2020
- Yano Research Institute Ltd., “Indoor Positioning Solutions Market in Japan: Key Research Finding 2021” , January 7, 2022
- Yano Research Institute Ltd., “Metaverse Market in Japan: Key Research Findings 2022, September 21” , 2022
- IDC “Japan Datacenter Services Forecast” (August 29, 2022)
- Synergy “Virginia Still Has More Hyperscale Data Center Capacity Than Either Europe or China”
- IDC “Japan Public IT Cloud Services Forecast” (September 15, 2022)
- MM Research Institute “Survey on Domestic Cloud Service Demand Trends” (as of June 2022)
- MIC “Survey on Usage Trends”
- IDC “Japan Edge Infrastructure Forecast” (January 18, 2023)
- Deloitte Tohmatsu MIC Research Institute “Reality and Future Prospects of Edge AI Computing Market” (October 24, 2022)
- IDC “Japan Artificial Intelligence Systems Forecast” (April 27, 2023)
- Stanford University “Artificial Intelligence Index Report 2023”
- Thundermark Capital “AI Research Ranking 2022”
- IDC “China's Artificial Intelligence Market Will Exceed US\$26.7 Billion by 2026, According to IDC” (October 4, 2022)
- Canalys estimates
- Canalys “Strong channel sales propel the cybersecurity market to US\$20 billion in Q4 2022”
- Canalys data
- IDC Japan, July 2022 “Japan IT Security Products Market Shares, 2021: External Threat Measures and Internal Threat Measures” (JPJ47880222)
- National Institute of Information and Communications Technology “NICTER Observation Report 2022”
- NPA, MIC, METI “Unauthorized Access Activities and Status of Research and Development of Access Control Technology”
- MIC “Fiscal 2022 Result of Survey on Wireless LAN User Attitudes”
- MIC (2023) “Survey Research on R&D on the Latest Information and Communications Technologies and Trends of Use of Digital Technologies in Japan and Abroad”
- MIC “Survey on Household Income and Expenditures” (total households)
- MIC Institute for Information and Communications Policy “Fiscal 2022 Survey on Information and Communications Media Usage Time and Information Behavior”
- FactCheck Initiative “Questionable Discourse Database (ClaimMonitor)”
- MIC “Fiscal 2022 Result of Survey on Actual Condition of Telework Security”
- Digital Agency “Overview of Results of Administrative Procedure Inventory”
- UN e-Government Surveys
- Waseda University Institute of d-Government “World Digital Government Ranking”
- MIC “Fiscal 2022 Online Usage of Administrative Procedures by Local Governments”
- MIC “Overview of Promotion of DX and Use of Information by Local Governments: Summary of Fiscal 2022 Survey on Promotion of Use of Administrative Information by Local Governments”
- MIC “Individual Number Card Delivery Status”
- Digital Agency “Policy Data Dashboard (Beta)”
- MIC “Promotion of AI/RPA Usage by Local Governments”
- MIC “Survey on Remote Work Initiatives by Local Governments”
- Japan Post Group “Financial Results for the Period Ending March 2023”
- Japan Post Group “Disclosure Report”
- Japan Post Holdings Co., Ltd. “Overview of Financial Results”
- Japan Post Holdings Co., Ltd. “Postal Service Income and Expenditures”
- Japan Post “Information on Number of Post Offices <Open Data>”
- Japan Post “Number of Accepted Postal Matters” for each fiscal year
- Japan Post Bank Securities Report
- Japan Post Insurance Securities Report

Chapter 5

- MIC “Direction of ICT policy toward 2030” (first report)
- MIC “Direction of ICT policy toward 2030” (final report)
- MIC (2023) “Telecommunications Accident Verification Conference Notification and Contact Organization Working Group” (summary)
- MIC (2022) “Summary of the Future of Broadcasting in the Digital Age”
- “Cybersecurity Strategy” (2021)
- Cybersecurity Strategic Headquarters (2022) “Action Plan on Information Security of Critical Infrastructure”
- Digital Agency (2022) “Sub-working Group for Trust-Assured Digital Transformation” report
- Tokyo Shoko Research (2022) “The 22nd 'COVID-19 Questionnaire' Survey”

- “Joint Principles of the Japan-U.S.-Australia-India Cybersecurity Partnership” (2022)
- IHS Markit materials
- JST Center for Low-Carbon Society Strategies (2021) “Proposal for Establishing Policy to Achieve a Low-Carbon Society: Impact of Advances in Information Society on Energy Consumption (Vol. 3)”
- Map data © 2022 Google