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CHRONICLE OF DIGITAL TRANSFORMATION (DT) THROUGH INTERNET OF THINGS TECHNOLOGIES

Some biweekly perspectives on DT from around the globe gathered by CDAIT - 50 added for this Digest (3850 entries since April 1, 2022) https://cdait.gatech.edu/sites/default/files/2025-07/Digital_Transformation_Through_IoT_Technologies_as-of-mid-July-2025.pdf

GOVERNANCE & THE INTERNET OF THINGS

Anna Ribeiro, "OT cybersecurity reporting remains a structural weakness as threats outpace legacy governance models," Industrial Cyber, July 13, 2025 <https://industrialcyber.co/feature/s/ot-cybersecurity-reporting-remains-a-structural-weakness-as-threats-outpace-legacy-governance-models/>

Kihara Kimachia, "8 Common Data Governance Challenges," TechRepublic, July 8, 2025 <https://www.techrepublic.com/article/data-governance-challenges/>

Alun Williams, "What caught your eye? (Chips Act, AI datacentres, Rohm mosfet, LPD-S)," Electronics Weekly, July 10, 2025 <https://www.electronicweekly.com/blogs/electro-ramblings/latest-news/what-caught-your-eye-chips-act-ai-datacentres-rohm-mosfet-lpd-s-2025-07/>

Wiley posting, "Update: Enforcement of DOJ Data Security Program Set to Begin July 9," Wiley, July 8, 2025 <https://www.wiley.law/alert-Update-Enforcement-of-DOJ-Data-Security-Program-Set-to-Begin-July-9>

William Payne, "Americas: IoT Public Policy Index," IoT M2M Council, June 25, 2025 <https://www.iotm2mcouncil.org/iot-library/news/iot-security-public-policy/iot-smart-device-public-policy-news-americas/>

William Payne, "Australia's evolving IoT regulations," IoT M2M Council, June 25, 2025 <https://www.iotm2mcouncil.org/iot-library/news/iot-security-public-policy/australias-evolving-iot-regulations/>

GT CDAIT Biweekly IoT News Digest (07/25 – 1)

IoT News and Market Reports

(First Half of July 2025)

- Selected IoT-related announcements and featured activities/topics gathered by CDAIT from governments; agencies; consortia; alliances; associations; standards, research and other similar groups around the world – 15 entries: https://cdait.gatech.edu/sites/default/files/2025-07/IoT_News_Filings_July_2025_First_Half.pdf
- Sample list of IoT-related market reports gathered by CDAIT – 50 entries: https://cdait.gatech.edu/sites/default/files/2025-07/IoT_Market_Reports_July_2025_First_Half.pdf

Georgia Tech IoT-related Info/Research Noticed by CDAIT

- Chen, I. "Millimeter Wave Dual-Polarized Energy Detection Backscattering RFID for 5G IoT Energy Autonomous Applications," (2025) <https://repository.gatech.edu/entities/publication/28afa212-09d0-405f-a9d7-576192875444>
- Zhang, Jingyuan, "Enhancing mmWave Network Connectivity and Edge Intelligence through Reconfigurable Intelligent Surfaces for Communication and RF Processing," (2025) <https://repository.gatech.edu/entities/publication/13d26a4a-691c-49f0-be19-8efd2f8683c1>
- Hiremath, Shruthi K. "Deriving Bespoke Human Activity Recognition Systems for Smart Homes," (2025) <https://repository.gatech.edu/entities/publication/1497a549-ca87-447e-a025-4113d5a3477b>
- Mao, Xiangyu, "Efficient Hardware Architectures for High-Throughput Streaming Data RF and AI-Driven Communication Systems," (2025) <https://repository.gatech.edu/entities/publication/b9d6aab8-5fab-4bf4-99ac-0af44c3f2691>

OF NOTE: Stephen J. Bigelow, "How to plan a successful IoT deployment," TechTarget, July 11, 2025 <https://www.techtarget.com/iotagenda/tip/How-to-plan-a-successful-IoT-deployment>; A new chip component designed by MIT researchers promises to expand the reach of the Internet of Things into 5G, see: Margo Anderson, "The Internet of Things Gets a 5G Update - MIT's clever chip design provides efficient frequency hopping," IEEE Spectrum, July 9, 2025 <https://spectrum.ieee.org/internet-of-things-5g-mit>

Special Reading Suggestions

- Aditya Pranav, "IoT app development: Use cases, Strategy & Cost," Antino, July 12, 2025 <https://www.antino.com/blog/iot-application-development>
- Jason Smith, "The Internet of Things (IoT): Managing Homes, Transport and Businesses in 2025," Geektown, July 11, 2025 <https://www.geektown.co.uk/2025/07/11/the-internet-of-things-iot-managing-homes-transport-and-businesses-in-2025/>
- Madhanraj J, "Integrating AI and Cloud Computing to Manage and Analyze IoT Data," CXOtoday, July 10, 2025 <https://cxotoday.com/press-release/integrating-ai-and-cloud-computing-to-manage-and-analyze-iot-data/>
- Lee House, "Why Industrial IoT Projects Keeps Failing and What Needs to Change," The Fast Mode, July 11, 2025 <https://www.thefastmode.com/expert-opinion/43237-why-industrial-iot-projects-keeps-failing-and-what-needs-to-change>
- Mohammad Zulhusni, "Siemens and Microsoft enable open-standard IoT for smart buildings," IoT Tech News, July 9, 2025 <https://iottechnews.com/news/siemens-and-microsoft-enable-open-standard-iot-for-smart-buildings/>
- Kenta Yasukawa, "The SGP.32 effect – an eSIM that finally works for IoT (Reader Forum)," RCR Wireless News, July 9, 2025 <https://www.rcrwireless.com/20250709/opinion/sgp-32-effect-esim-iot-soracom>
- Sean Michael Kerner, "IoT and digital twins: How they work together, with examples," TechTarget, July 9, 2025 <https://www.techtarget.com/iotagenda/feature/IoT-and-digital-twins-How-they-work-together-with-examples>
- Udo Bormann, "Beyond IoT 2025: Deep Technical Insights into Industrial IoT," EE News Report, July 8, 2025 <https://www.eenewseurope.com/en/beyond-iot-2025-deep-technical-insights-into-industrial-iot/>
- Maurizio Di Paolo Emilio, "Innovation in Medical IoT: Wearable Biometrics, AI in Healthcare, and New Devices," EE Times, July 8, 2025 <https://www.eetimes.com/podcasts/innovation-in-medical-iot-wearable-biometrics-ai-in-healthcare-and-new-devices/>
- Rene Mulyandari, "How to eliminate IoT vulnerabilities that are putting your business at risk," IoT Now, June 30, 2025 <https://www.iot-now.com/2025/06/30/152182-how-to-eliminate-iot-vulnerabilities-that-are-putting-your-business-at-risk/>

Selected IoT Perspectives Open Source IoT 2024/25

"So, what's the big picture for network automation and IoT? Network slicing, which will give operators the automated ability to create bespoke, cross-domain data pipes capable of connecting any device to any cloud or edge device or data center with bandwidth provisioned in a way that meets the specific requirement of any enterprise or industrial IoT Applications. All made possible with open source." Brian Ray, "Open Source Software and Hardware for the Internet of Things," IoT for All, December 2, 2024 <https://www.iotforall.com/open-source-iot>

- Ana Crudu and MoldStud Research Team, "Top Open Source Frameworks for Smart Home IoT Development in 2025," MoldStud, June 27, 2025 <https://moldstud.com/articles/p/top-open-source-frameworks-for-smart-home-iot-development-in-2025>
- GetApp posting, "Open Source IoT Software (2025)," GetApp, last updated June 2025 <https://www.getapp.com/emerging-technology-software/iot/p/open-source/>
- Chinmoy Kumar, "Open Source IoT: A Primer for Everyone," Open Source ForU.com, February 11, 2025 <https://www.opensourceforu.com/2025/02/open-source-iot-a-primer-for-everyone/>

Research background info (sample): Rodriguez-Cardenas, Daniel, Safwat Ali Khan, Prianka Mandal, Adwait Nadkarni, Kevin Moran, and Denys Poshyvanyk, "Testing Practices, Challenges, and Developer Perspectives in Open-Source IoT Platforms," arXiv preprint arXiv:2502.07257 (2025) <https://arxiv.org/abs/2502.07257>; Hegde, Seema B., Tadiogola Narendra Reddy, Prasad Prasannan, K. V. Manjunath, Mervin A. Herbert, and Shrikantha S. Rao, "Open-source solutions for real-time data retrieval in industrial automation and IoT environments," International Journal of Internet Manufacturing and Services 11, no. 1 (2025): 73–92 <https://www.inderscienceonline.com/doi/abs/10.1504/IJIMS.2025.144351>; Perret, Franck, Ilane Cherif, Frédéric Cherqui, Nicolas Walcker, Adrien Barra, Bastien Bourjaillat, Laëtitiia Bacot, and Oldrich Navratil, "eLogUp! A precise, affordable and open-source IoT data logger to scale-up long-term environmental monitoring," HardwareX (2025): e00660 <https://www.sciencedirect.com/science/article/pii/S2468067225000380>; Ayele, Eyuel Debebe, Stylianos Gavriel, Javier Ferreira Gonzalez, Wouter B. Teeuw, Panayiotis Philimis, and Ghayoor Gillani, "Emerging industrial internet of things open-source platforms and applications in diverse sectors," In Telecom, vol. 5, no. 2, pp. 369–399, MDPI, 2024 <https://www.mdpi.com/2673-4001/5/2/19>; Gentile, Antonio Francesco, Davide Macri, Domenico Luca Carni, Emilio Greco, and Francesco Lamonaca, "A performance analysis of security protocols for distributed measurement systems based on internet of things with constrained hardware and open source infrastructures," Sensors 24, no. 9 (2024): 2781 <https://www.mdpi.com/1424-8220/24/9/2781>; --- See "Open Source for IoT -- Eclipse IoT technologies power the world's leading commercial IoT Solutions" <https://iot.eclipse.org/>



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