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Manufacturing in Multinational Enterprises. -- Investigation of Compression Strength Enhancement in 3D-Printed Hollow Structures Using Granular Backfill. -- Enhancing Circular Economy Platform Design with Artificial Intelligence-Based Functionalities. -- Upgrade Circular Economy for the Manufacturing Industry. -- Integrating product, process, and organization perspectives for building circular manufacturing systems. -- Design of production structures for circular production. -- Information Requirements for Data-Driven Upgrade Engineering to Enable an Upgrade Circular Economy. -- Paradigm shift eco-effectiveness – toolmaking as the enabler of sustainable production. -- Towards End-of-Life Management of Photovoltaic Panels with Life Extension Approaches: Reuse, Recondition and Recycle. -- The impact of environmental taxes and other factors on the ROI of introducing automated transport systems in factories. -- Cyber-Physical System-Based Approaches to Achieve Sustainability. -- Socially Sustainable Human-Robot Systems in Manufacturing and Logistics: A Content Analysis. -- Forecast-Driven Reconfiguration in Sustainable Production Systems. -- Integrating Sustainability with Equitable Operator Fatigue Distribution. -- Sustainability through Industry 4.0 Technologies: Discrete Event Simulation for Data-Driven Energy Management. -- Industrial Data Spaces and Sustainability. -- Manufacturing Network Topologies for Sustainable Production. -- Experience-integrated Product Family Formation using Clustering Algorithms. -- PDCA perspective in energy management system according to ISO 50001 in the healthcare organization. -- Data Spaces as Enablers of Digital Twin Ecosystems: Challenges and Requirements. -- Enabling Circularity in Batteries & E-Waste with Digital Technologies: From Production to Recycling. -- Camera-based Methodology for the Automated Real-Time Assessment of Material Thinning in Battery Cell Manufacturing. -- Challenges in Achieving Circular Battery Production in Sweden. -- Business model archetypes and deployment strategies for EV battery swapping – Preliminary insights. -- Blockchain Technology for Enabling Battery Circularity: Key Challenges and Benefits. -- Digital Technologies for EV battery Circularity: An explorative study on 10R circular strategies. -- Toward Smarter EV Battery Operations: Leveraging AI, Data Management, and Optimization in First-Life Use. -- Unlocking Circularity in Switzerland’s Metal Recycling System: The Role of Sensor Technologies and Systemic Barriers. -- A Battery Circularity Decision Support Framework for Sustainable Transport Applications. -- Circular and Green Manufacturing. -- Optimizing the Reuse of Requalified CFRP in Drone Manufacturing. -- Scientific Concept For Analyzing The Potential Of Energy-Oriented Production Planning And Control In SMEs. -- Future-proofing production and operations management education: An IFIP WG5.7 benchmarking study. -- Identifying Key Aspects of Circular Manufacturing Systems: A Structured Literature Review. -- Sustainable Product Design and Engineering. -- Bridging the Gap between Circularity and Sustainability - A Strategic Framework for Small and Medium-sized Enterprises. -- Only What’s Needed: Frugal Smart Systems for Resilience in Manufacturing. -- Green Design Methodology in Production Equipment Design and Acquisition: State of Practice and Way Forward.

Sommario/riassunto

The six-volume set IFIP AICT 764-769 constitutes the refereed proceedings of the 44th IFIP WG 5.7 International Conference on Advances in Production Management Systems, APMS 2025, held in Kamakura, Japan, from August 31st to September 4th, 2025. The 227 full papers presented in these proceedings were carefully reviewed and selected from 247 submissions, which cover a broad array of research

and technological developments on the present and future of “Cyber-Physical-HUMAN Production Systems”. They were categorized under the following topical sections: Part I: Human-centred Work Systems for the Operator 4.0/5.0 in Manufacturing, Logistics, and Service Domains; AI-Driven Decision Support and Human-AI Collaboration for Smart and Sustainable Supply Chains; Digital Twins and AI for Dynamic Scheduling and Human-Centric Applications. Part II: Smart Manufacturing Evolution: Integrating AI and the Digital Twin for Human-centric, Circular and Collaborative Production Systems; Human-centered Service Engineering and Digital Transformation for Sustainable Service Industries; Shaping Human Capital for Industry 5.0: Skills, Knowledge and Technologies for Human-centric, Resilient, and Sustainable Manufacturing; Experiential Learning in Engineering Education; Theoretical and Practical Advances in Human-centric, Resilient, and Sustainable Supply Chain Management; Maintenance and Asset Lifecycle Management for Sustainable and Human-centered Production; Methods and Tools for Assessing the Value of Digital, Sustainable and Servitized Offerings of Manufacturing Companies. Part III: Digital Transformation Approaches in Production and Management; Digital Technologies in Manufacturing and Logistics: Exploring Digital Twin, IoT, and Additive Manufacturing; Enhancing the Value Creation Mechanisms of Manufacturing Value Chains through Digital Platforms, Circular strategies, and Servitization Principles. Part IV: Enhancing Value Chain Resilience through Digital Technologies; How Supply Chain Can React to Internal and External Disruptions?; Mechanism Design for Production, Service and Supply Chain Management; Transforming Engineer-to-Order Projects, Supply Chains, and Systems; Designing Next Generation Lean Models Supporting Social, Sustainable, and Smart Production Systems. Part V: Advancing Eco-efficient and Circular Industrial Practices; Upgrade Circular Economy for the Manufacturing Industry; Cyber-Physical System-Based Approaches to Achieve Sustainability; Industrial Data Spaces and Sustainability; Enabling Circularity in Batteries & E-Waste with Digital Technologies: From Production to Recycling; Circular and Green Manufacturing; Sustainable Product Design and Engineering. Part VI: Digital Services and Smart Product-Service Systems; Innovative Approaches and Methods for Developing Industry 4.0 and Industry 5.0 Skills; Scheduling and Production Planning in Smart Manufacturing; Supply Network Planning and Optimization; Artificial Intelligence / Machine Learning in Manufacturing; Cloud and Collaborative Technologies; Simulation of Production and Supply Chains.