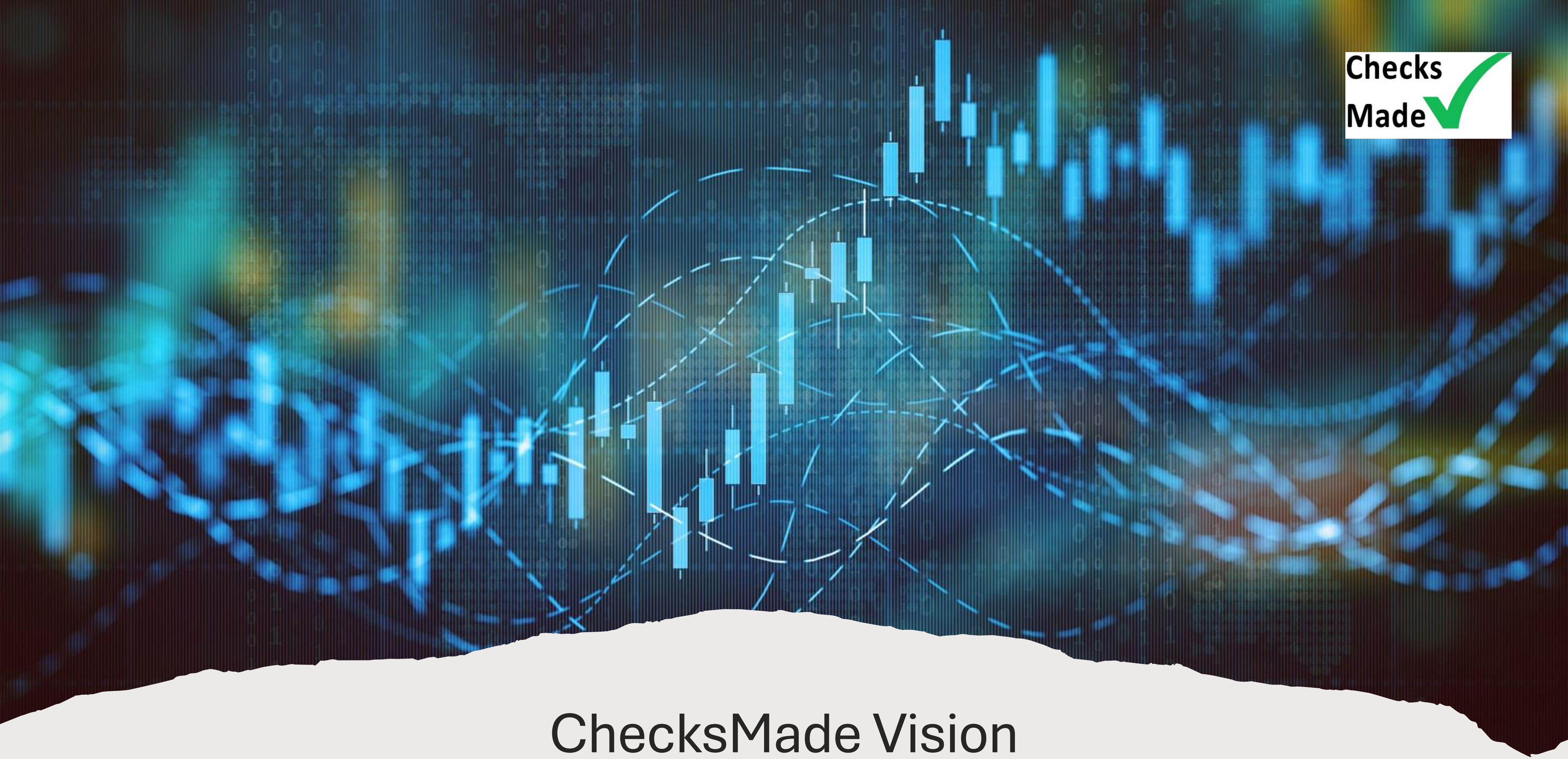
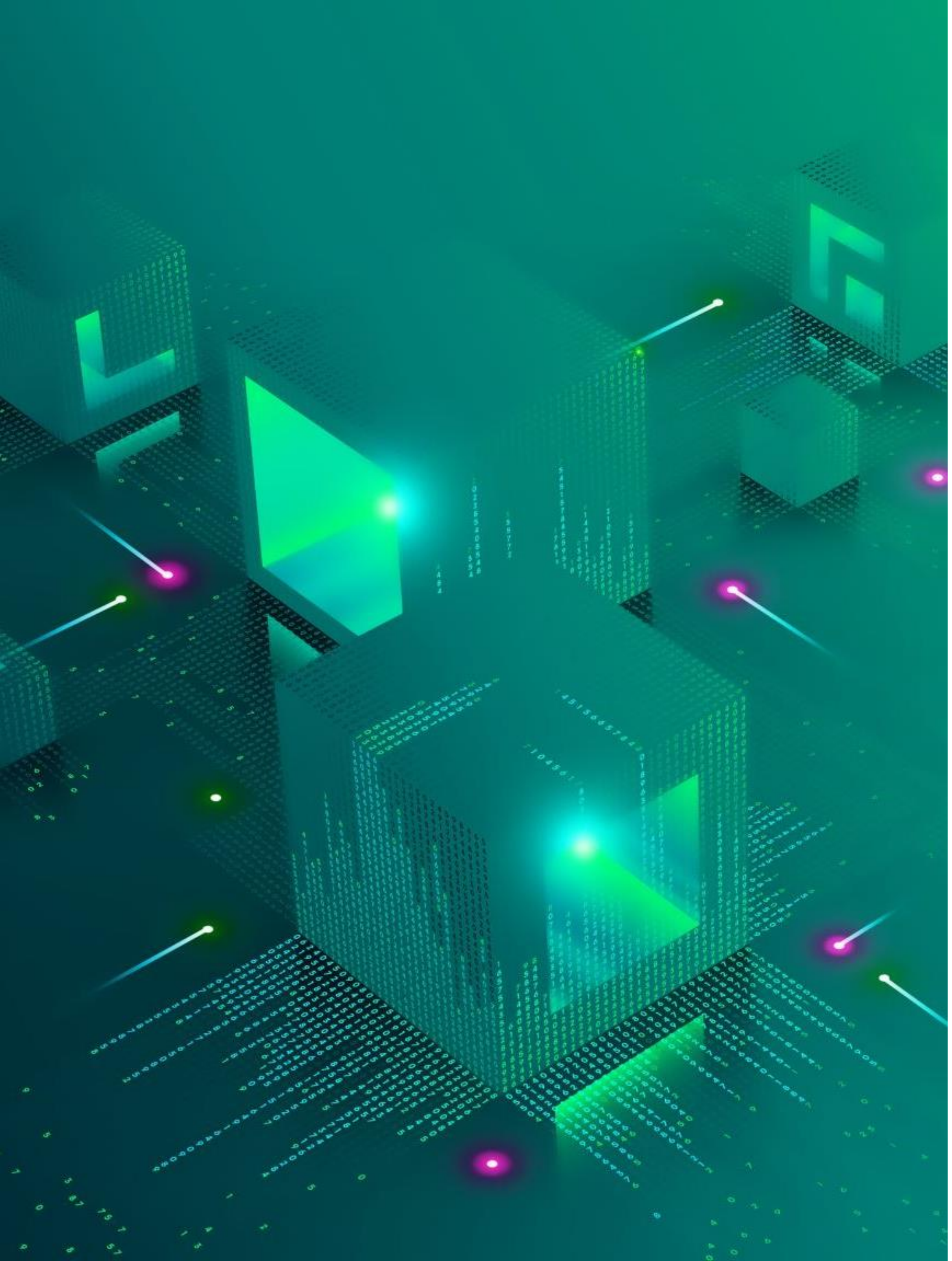


ChecksMade Vision

Gen AI Data extraction, processing & interaction, tokenized



Mission Statement

"Our mission is to capture the physical environment using multiple sensors and to transform that data using advanced AI generated 3D Digital Twin technologies. We are committed to extracting, processing, and interactively using zero trust digital twin data services, across multiple stakeholders, within a Zero Trust Data Space Ecosystem for Critical Infrastructure.

We ensure that all data is managed with zero trust principles, full traceability, and governance, while maintaining verifiable and transparent processes for multiple stakeholders in a multisensor environment under verifiable compliance with laws and regulations."

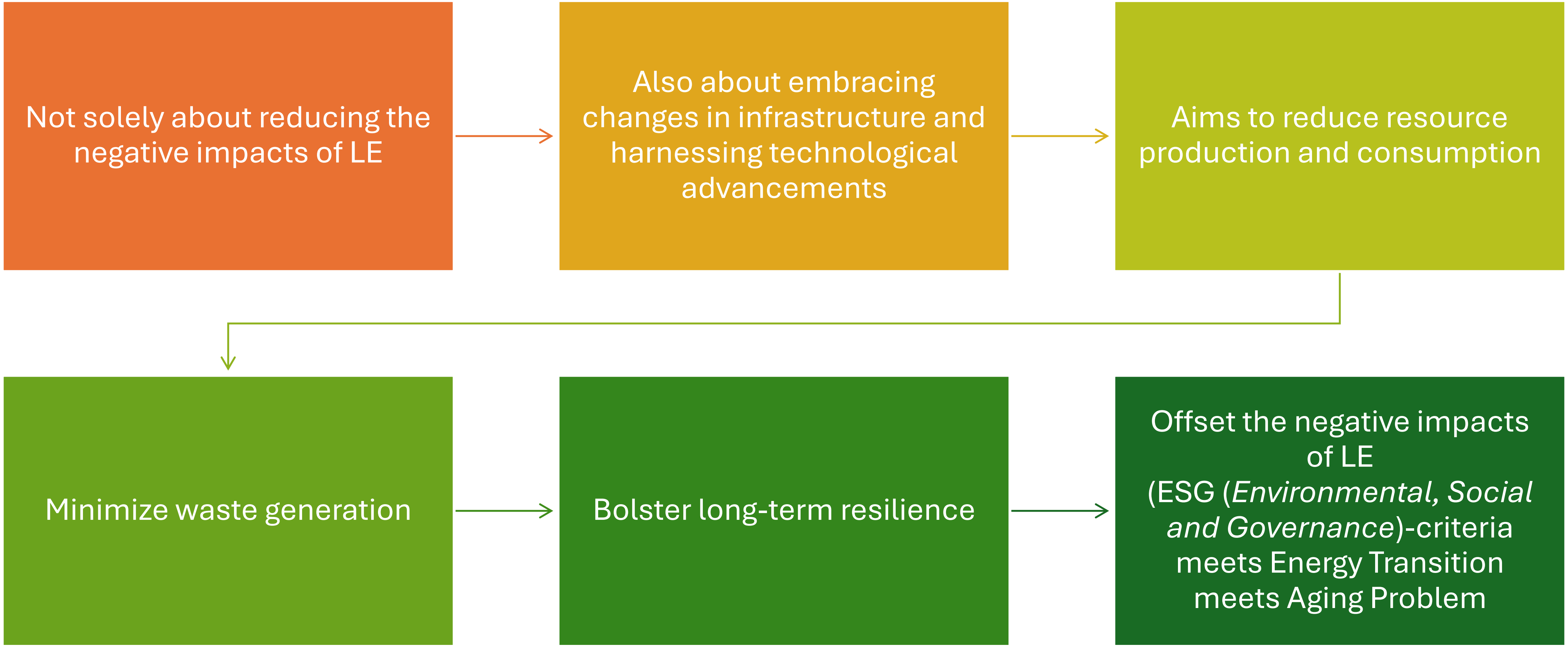
Industry 4.0

Industry 4. is accelerating rapidly worldwide as interconnected smart machines, AI, data applications, and cyberphysical systems reach high levels of technological maturity. These technologies are shaping governance, organizations, and humanmachine interfaces on a global scale within a Zero Trust Data Space for critical infrastructure. Generative AI further enhances the potential for transformation, offering new opportunities for development and automation, while ensuring that all processes adhere to Zero Trust principles, maintain full traceability and uphold verifiable and transparent governance and verifiable cyber security.

Characteristics of the 4th industrial revolution

Category / Industrial Revolution	1st Industrial Revolution (End of 18th century)	2nd Industrial Revolution (End of 19th century)	3rd Industrial Revolution (Mid 20th century)	4th Industrial Revolution (Today)
Production Shift	From agrarian handcraft economy to industrial and urban factorybased economy	Expansion of industrial production, mass production and assembly lines	Transition to digital and computerized production processes	Integration of digital, biological, and physical systems
Key Technologies	Steam engines, textile machinery, mechanization	Electricity, telegraph, internal combustion engine, steel production	Semiconductors, computers, nuclear energy, microprocessors	Artificial Intelligence (AI), IoT, robotics, blockchain, quantum computing
Enabling Infrastructure	Railways, coal mining, iron production, canals	Electrical grids, telegraph networks, expanding railways, telephone lines	Digital communication networks, satellites, internet, global supply chains	Advanced wireless and internet networks (5G), cloud computing, smart factories
Labor Impact	Shift from agrarian work to factory jobs, rise of industrial labor, urbanization, long working hours, poor working conditions	Rise of whitecollar jobs, improved working conditions, labor unions and labor laws emerge	Automation of repetitive tasks, increased focus on service and knowledge economy, job displacement in manufacturing sectors	Increased demand for hightech skills, gig economy emergence, greater flexibility but job instability, rise of remote work and digital platforms

From a Linear Economy (LE) to Circular Economy (CE)



Circular Economy needs a fusion of disciplines

- Environmental Sciences and Ecology
- Engineering
- Science and Technology
- Business Economics
- Computer Science
- Operations Research and Management Science
- Construction and Building Technology

“Government”

The principal task of a government is to maintain order, provide public services, ensure national security, and uphold the rights and freedoms of its citizens. This includes creating and enforcing laws, managing resources and public infrastructure, and protecting the country from internal and external threats.

Statement 1:

The global security environment is becoming increasingly contested, complex, and interconnected, straddling both the physical and digital worlds. Governments must adapt to this dynamic landscape by enhancing their capabilities in cybersecurity, intelligence, and international cooperation to safeguard national interests and ensure the safety of their citizens.

Statement 2:

The integration of design, construction, and maintenance is essential to achieve higher levels of safety and (cost) efficiency in both existing and new infrastructure projects. A holistic approach that considers the entire lifecycle of infrastructure—from planning and design to construction, operation, and maintenance—can lead to more resilient and sustainable systems. This integration not only enhances safety and operational efficiency but also optimizes resource allocation and reduces longterm costs.

“Organizations”

The principal task of an organization is to achieve its goals and objectives through coordinated efforts and effective resource management.
Key tasks typically include operational execution, performance monitoring, continuous improvement, and ensuring compliance with relevant regulations and standards.

Statement 1: The integration of design, construction, cybersecurity and maintenance is essential for organizations to achieve higher levels of safety and (cost) efficiency while ensuring compliance with legislation. By adopting an integrated approach, organizations can optimize their processes, reduce operational risks, and enhance the longevity and reliability of their infrastructure and assets.
This holistic strategy not only improves safety and costeffectiveness but also ensures that all activities are aligned with statutory and regulatory requirements, thereby mitigating legal risks and enhancing organizational reputation.

Advantages of Zero Trust Data Space Ecosystems

ENHANCED SECURITY: REDUCES INTERNAL AND EXTERNAL THREATS.

IMPROVED COMPLIANCE: ADHERES TO REGULATIONS AND SIMPLIFIES AUDITS.

OPERATIONAL EFFICIENCY: STREAMLINED ACCESS CONTROL AND SIMPLIFIED MANAGEMENT.

RESILIENCE AND CONTINUITY: LIMITS LATERAL MOVEMENT OF THREATS AND ENHANCES RECOVERY PLANS.

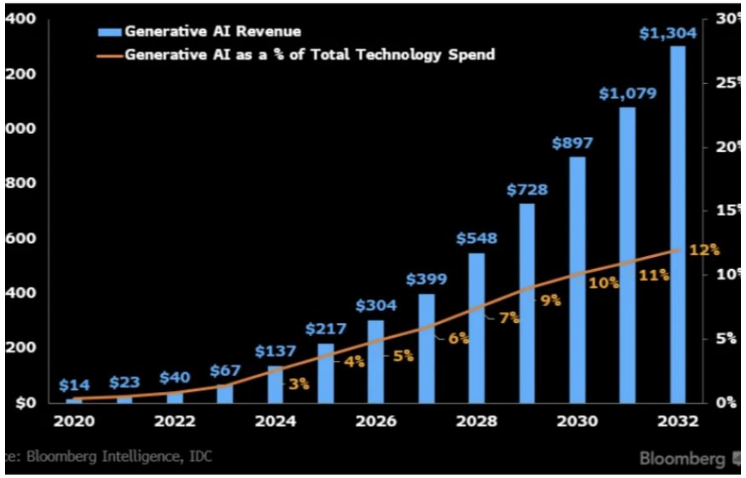
DATA INTEGRITY: PROTECTS AGAINST DATA MANIPULATION AND ENSURES HIGH DATA QUALITY.

SCALABILITY AND FLEXIBILITY: ADAPTS TO HYBRID ENVIRONMENTS AND SUPPORTS REMOTE WORK.

Market value data, Data Spaces, Trust and GenAI tech

"You can play with my toy, but please don't get it dirty, and make sure you bring it back to me before bedtime."

Balancing Data Sovereignty with Data Governance in a non-linear environment.



Bloomberg

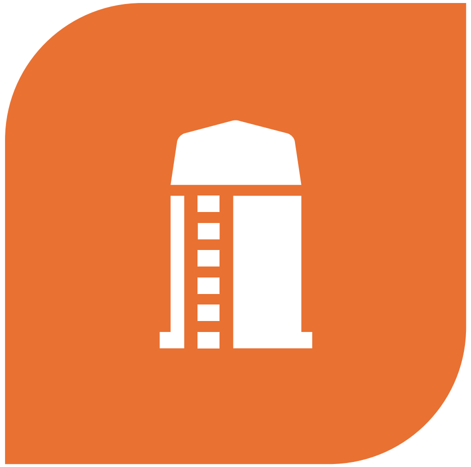
Bloomberg Intelligence Interactive Calculator: Generative AI Market Opportunity

($ million, unless otherwise specified)

Generative AI Revenue Projections	2022	2027E	2032E	2022-32E CAGR
Hardware	**$37,973**	**$223,615**	**$641,737**	**33%**
Devices (Inference)	$4,128	$82,965	$168,233	45%
Computer Vision AI Products	$1,032	$22,124	$60,564	50%
Conversational AI Products	$3,096	$60,841	$107,669	43%
Infrastructure (Training)	$33,845	$140,650	$473,505	30%
AI Server	$22,563	$49,641	$133,817	19%
AI Storage	$9,025	$33,094	$92,642	26%
Generative AI Infrastructure as a Service	$2,256	$57,915	$247,046	60%
Software	**$1,493**	**$58,826**	**$279,899**	**69%**
Specialized Generative AI Assistants	$447	$20,864	$89,035	70%
Coding, DevOps and Generative AI Workflows	$213	$12,617	$50,430	73%
Generative AI Workload Infrastructure Software	$439	$13,468	$71,645	66%
Generative AI Drug Discovery Software	$14	$4,042	$28,343	113%
Generative AI Based Cybersecurity Spending	$9	$3,165	$13,946	109%
Generative AI Education Spending	$370	$4,669	$26,500	53%
Generative AI Based Gaming Spending	**$190**	**$20,668**	**$69,414**	**80%**
Generative AI Driven Ad Spending	**$57**	**$64,358**	**$192,492**	**125%**
Generative AI Focused IT Services	**$83**	**$21,690**	**$85,871**	**100%**
Generative AI Based Business Services	**$38**	**$10,188**	**$34,138**	**97%**

Existing solutions extracting, processing and interacting petabytes of infrastructure digital twin data services between Zero Trust nodes, between multiple stakeholders in a multi sensor environment.

NOT AVAILABLE



DIFFERENT SOLUTIONS WITH SILOS OF PRODUCT AND SERVICES.

Reality Fetching Digital Twin Data Solution

CheckMade has combined solutions to present a Swiss army knife solution in full compliance with specific national and EU regulations towards data extraction, processing & interaction.

- Unique ID's / Authorization
- Data collation (fixed / flexible – under/above water)
- Digital twin tech solutions
- Data sharing and privacy
- National (EU) cloud
- Zero Trust Security
- Human Machine interface (Screen, MR, hologram etc)
- NFT and Tokenization

ChecksMade Value Chain

Expertise	World	EU	NL	Regional	Local
Governance	EU Commission	EU Agencies	NL Government	Provincial Governments	Municipal Governments
Security (cloud)services	AWS, Azure, Google Cloud	GaiaX PontusX CatenaX	SchubergPhilis	Regional ICT Service Centres	Local Cloudproviders
3D AI generated Digital Twin	DigitalTwinTech.com	Siemens, NVIDIA	Regional Tech hubs	Regional Tech Hubs	Local Startups
Trust & Governance	ISO, NIST	ENISA	NCSC, iShare	Regional Security Authorities	Local Consultancies
Personnel Identification	International Biometrics Group	Biometric solutions in the EU	SecureLogistics XSID	SecureLogistics XSID	SecureLogistics XSID
Sensoring	Honeywell, IBM	Bosch, Philips, Siemens	Bosch, Philips, Siemens etc.	Regional Tech Clusters	Local Businesses
Holographic presentation	Microsoft, Google, HTC	HoloTech Europe	Tekleholographics	Regional Innovation Centres	Local Presentation Services
Critical Infrastructure Maintenance	Siemens, Schneider Electric	Spie Europe	Spie, Kotug	Regional Infrastructure Services	Local Service Providers
Asset Owner	International Investors	EU Investment Bank	National Investors	Regional Investors	Local Owners

Transitioning to a Circular Economy (CE)

Current Model: Linear economy (LE) focusing on resource extraction, manufacturing, consumption, and disposal—leading to significant environmental and economic issues.

Circular Economy (CE): A restorative system promoting resource cyclical flow and full product lifecycle management (production, use, reuse, remanufacturing, recycling).

Strategies: Evolution from 3R (Reduce, Reuse, Recycle) to 10R models (Refuse, Redesign, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover).

EU: 202 Circular Economy Action Plan for comprehensive lifecycle integration.

Role of Digital Technologies (DTs):

DT-DRIVEN CE: ESSENTIAL FOR IMPROVING RESOURCE UTILIZATION AND TACKLING ENVIRONMENTAL/ECONOMIC PRESSURES.

FUNCTIONS: GENERATION, PROCESSING, STORAGE, TRANSMISSION, AND RESTORATION OF INFORMATION.

LEVERAGING DTS: PIVOTAL FOR ADVANCING CE PRINCIPLES, PROMOTING SUSTAINABILITY, AND ENSURING ECONOMIC RESILIENCE.

Relationship Between Technologies and the Circular Economy (CE)

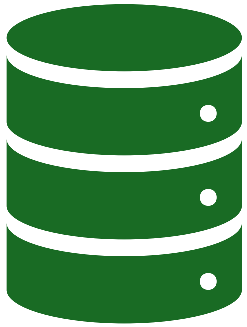
Digital Twin	Creates virtual replicas of physical assets to monitor, optimize, and enhance lifecycle management and resource efficiency.
Virtual Reality (VR)	Simulates environments for training and visualizing sustainable practices, enhancing product design and lifecycle assessment.
Augmented Reality (AR)	Provides real-time information overlay to assist in maintenance, repair, and operational efficiency, extending product lifecycles.
Mixed Reality (MR)	Combines VR and AR to create an immersive environment for planning, simulation, and optimization of circular processes.
Artificial Intelligence (AI)	Optimizes resource use through predictive analytics, automates waste management, and enhances decision-making for CE practices.
Big Data	Analyzes vast amounts of data to identify trends, optimize resource flows, and improve supply chain transparency.
Cyber-Physical System (CPS)	Integrates computation, networking, and physical processes to enhance real-time monitoring and control of circular operations.
Cloud Computing	Provides scalable storage and processing power for big data analytics, supporting real-time decision-making in CE practices.
Building Information Modeling (BIM)	Enhances lifecycle management of buildings by facilitating resource-efficient design, construction, and maintenance practices.
Blockchain	Ensures transparency and traceability in supply chains, aiding in verifying circular practices and preventing resource leakage.
Tokenization	Converts physical assets into digital tokens for efficient tracking, management, and trading, enhancing resource utilization tracing.
Non-Fungible Tokens (NFTs)	Facilitates the trade and ownership proof of unique digital assets, promoting digital certificates for reused or recycled products.
Industry 4.0	Integrates advanced technologies for Smart Manufacturing, promoting resource efficiency + reducing waste through automation and data analytics.
Internet of Things (IoT)	Connects devices for real-time monitoring, optimizing resource use, and enabling predictive maintenance to extend product lifecycles.
Robotics	Automates processes to reduce waste, enhance precision in production, and facilitate disassembly and recycling operations.

Re-imagineering Legacy Infrastructure management

Digital Twin	Creates a digital replica of infrastructure like bridges and electricity networks for real-time monitoring, predictive maintenance, and lifecycle optimization.
Virtual Reality (VR)	Provides immersive simulations for assessing infrastructure conditions, training maintenance personnel, and visualizing potential refurbishments.
Augmented Reality (AR)	Offers on-site engineers real-time data overlays to guide repairs and upgrades, leading to more precise and efficient refurbishing.
Mixed Reality (MR)	Combines VR and AR to support comprehensive planning and simulation for complex infrastructure projects, enabling better decision-making.
Artificial Intelligence (AI)	Analyzes data to predict failure points, optimize maintenance schedules, and enhance resource allocation for infrastructure projects.
Big Data	Processes large datasets to identify patterns, predict infrastructure performance, and guide asset management decisions.
Cyber-Physical System (CPS)	Integrates physical infrastructure with computational capabilities for enhanced monitoring, control, and automation.
Cloud Computing	Provides scalable storage and processing power for big data analytics and remote management of infrastructure assets.
Building Information Modeling (BIM)	Enhances the design, construction, and maintenance of infrastructure projects by providing detailed, data-rich models.
Blockchain	Ensures transparent and secure tracking of materials and components, verifying their provenance and lifecycle stages.
Tokenization	Converts physical asset components into digital tokens for efficient tracking, procurement, and recycling within infrastructure projects.
Non-Fungible Tokens (NFTs)	Manages unique digital certificates for refurbished parts, ensuring transparency and authenticity in reuse processes.
Industry 4.0	Integrates advanced manufacturing and data analytics to optimize infrastructure asset management practices, reducing waste and increasing efficiency.
Internet of Things (IoT)	Connects infrastructure components for continuous real-time monitoring, predictive maintenance, and efficient operation management.

Mapping and Asset Management

Digital Twins, IoT and BIM allow for precise and continuous monitoring of infrastructure conditions, helping to map and manage assets effectively.



Big Data and AI enable the analysis of vast amounts of data to predict failures and optimize maintenance schedules.

Reinventing and Refurbishing

VIRTUAL REALITY (VR) AND AUGMENTED REALITY (AR) PROVIDE IMMERSIVE AND REAL-TIME DATA OVERLAYS TO GUIDE REFURBISHMENT PROJECTS, IMPROVING ACCURACY AND EFFICIENCY.

ADDITIVE MANUFACTURING AND 3D PRINTING ALLOW FOR THE ON-DEMAND PRODUCTION OF CUSTOM PARTS, REDUCING MATERIAL WASTE AND DOWNTIME.

ROBOTICS AUTOMATE REFURBISHMENT TASKS, PARTICULARLY IN HAZARDOUS OR HARD-TO-REACH AREAS, ENHANCING SAFETY AND PRECISION.

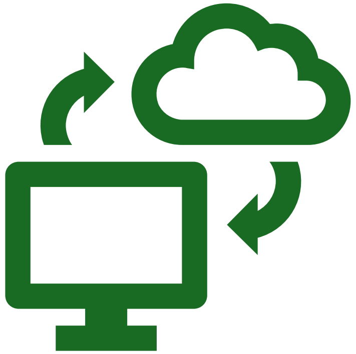
Reengineering

MIXED REALITY (MR) SUPPORTS COMPLEX PLANNING AND SIMULATION EFFORTS, ENABLING EFFECTIVE REENGINEERING OF LEGACY SYSTEMS.

CYBER-PHYSICAL SYSTEMS (CPS) ENHANCE THE INTEGRATION OF PHYSICAL INFRASTRUCTURE WITH COMPUTATIONAL CAPABILITIES FOR SMARTER, MORE AUTOMATED REENGINEERING SOLUTIONS.

Sustainability and Circular Economy

Blockchain, Tokenization, and NFTs ensure transparent and secure tracking of materials and components, promoting reuse and recycling.

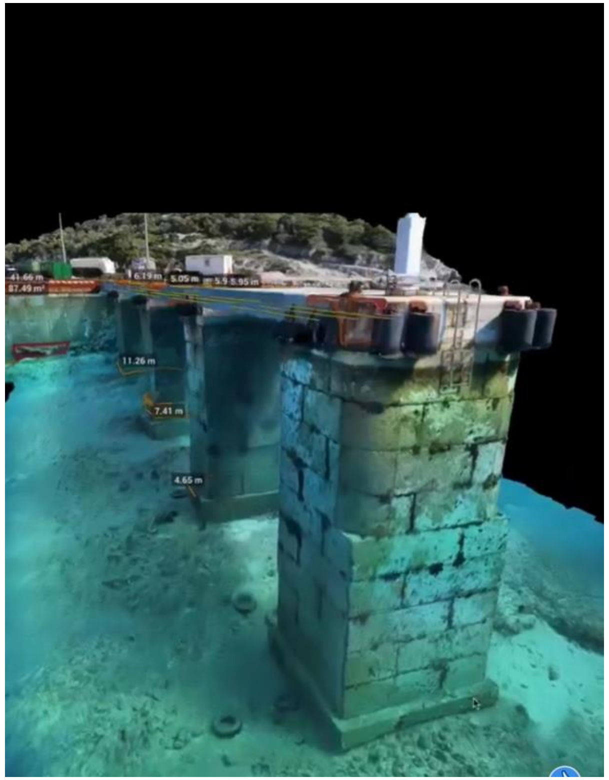


Cloud Computing supports scalable data storage and remote management, facilitating widespread implementation of sustainable practices.

Capability Integration ‘as-a-Service’

Scalable Zero Trust data replication

AI Powered Reality Fetching Digital Twin



ChecksMade Value Proposition

- All in Swiss army knife solution
- National (EU) compliance
- NL/EU contract party
- Flexible licensing structure

Contract alignment