Lighthouse Change Stories, Solutions, and Impacts for "Global Lighthouse Network: Rewiring Operations for Resilience and Impact (2026)

Distinction in Customer Centricity

Wave 14 (Customer Centricity)

Site	Change story	Top five solutions	Impact	
Eaton Electrical Equipment (Changzhou, People's republic of China)	Managing a complex portfolio of 164,000 stock-keeping units (SKUs) and over 5,000 new custom designs annually, Eaton's Changzhou site deployed digital transformation to improve agility and cost-effectiveness. By applying AI and simulation, Eaton shortened its design cycle. Adopting advanced robotics improved labour productivity and GenAI and digital twin solutions enhanced responsiveness. As a result, the company reduced lead time by 39%, increased operational efficiency by 50% and grew revenue by 129%, all without expanding its workforce.	Knowledge graph with LLMs powered smart bidding system	-52%	Bidding & customized order design cycle time
		AI enabled simulation for cabinet performance optimization and delivery cycle reduction	-39%	Order to ship lead time
		AIGC and knowledge graph powered customized field service solution	-89%	Customer complaints in service
		Humanoid Robot powered productivity optimization to reduce defect rate	+25%	First Pass Yield
		AI agent and edge computing powered decision-making and full process transparency to customer	-91%	Time to diagnosis
Mettler-Toledo International (Changzhou, People's republic of China)	In response to shifting customer demand towards tailored solutions and a fragmented market landscape, and with 34.8% of orders being single-item orders, the Mettler Toledo site in Changzhou embarked on a digital transformation. The site deployed 49 Fourth Industrial Revolution (4IR) use cases, including AI-accelerated product configuration, reconfigurable modular cluster workstations, and machine learning powered welding inspection with closed-loop adjustments to preserve quality. These solutions helped the site achieve a 98.4% on-time delivery rate, a 22% lead time reduction and a net promoter score of 84.9.	Joint cost saving with suppliers through "Should Cost Analysis"	+159%	Material cost savings
		Accelerated ETO configuration for customer requirement based on Apriori and Genetic Algorithm	-64%	Customer request to proposal lead time
		AI-Powered quality control for high-speed twin-wire automated welding	-60%	Field Failure / Warranty Rate
		Discrete Event Simulation (DES) & Genetic Algorithms (GA) based cluster workstations reconfiguration	+38%	Productivity
		Material replenishment strategies dynamic optimization based on Markov Chain Monte Carlo (MCMC)	-48%	Raw Material Inventory

Wave 15 (Customer Centricity)

Site	Change story	Top five solutions	Impact	
Hisense Visual Technology (Qingdao, People's republic of China)	Operating in the mature TV market, the company faced rapidly evolving consumer demand alongside growing cost competition. In this environment, Hisense Qingdao faced challenges in its product development, processes, cost control and manufacturing. To address these, the site adopted AI, big data, simulation and large-scale Virtual Reality (VR) throughout its new product R&D and manufacturing. Its digital transformation resulted in Hisense Qingdao achieving an NPS of 84%, reducing R&D cycles by 34% and lowering material costs by 18%, and new employee training time by 60%.	Intelligent Consumer Insight & Product Requirements Management	-62%	Analysis Cycle Time
		Software Development & Testing Empowered by LLM-based Agents	-31%	Software development cycle
		Intelligent process design & verification	-33%	Process design and validation cycle
		Big Data and AI-based Cost Management	-18%	Material cost per unit (except panel)
		Large-scale VR Enabling Key Process Collaborative Training	-92%	Off-line training duration
Carl Zeiss Vision (Guangzhou, People's republic of China)	To deliver highly personalized optical lenses to global customers faster, Carl Zeiss Vision Guangzhou developed more than 100 digital use cases. Deploying technologies such as machine learning, digital twins and AI agents, to tailor products based on customer age, visual needs and lifestyle, the initiative expanded the personalized product range by 400%, cut delivery lead time by 29% and achieved 98.5% on-time delivery and customer satisfaction scores of 99.	Digital Twins and Cloud Computing-Empowered Personalized Lens Selection	+76%	Personalized Lenses Order
		Big data-Driven Flexible Personalization	-43%	Production lead time
		AI-Enabled Invisible Traceability for Lenses	-75%	Customer complaint resolution time
		AI Agent-Empowered Personalized Lens Dynamic Parameter Optimization	-37%	Return rate
		AI-Driven Customized Coating Elevates the Customer Experience	53%	Customized coating category

Distinction in Productivity

Wave 14 (Productivity)

Site	Change story	Top five solutions	Impact	
Global Foundries (Woodlands, Singapore)	To address talent shortages and surging demand, including for new automotive devices, GlobalFoundries' Fab 7 in Singapore implemented over 60 4IR use cases to tackle increasing process complexity, meet more stringent quality requirements and accelerate prototype development. The site built a holistic transformation team, partnering with AI vendors and universities across four impact areas: machine learning-based predictive maintenance; remote support enablement; machine learning-powered quality control; and workflow digitalization. As a result, labour productivity improved by 40% and new product introduction prototyping time improved by 30%.	AI-integrated post-maintenance tool qualification end-to-end workflow	+44%	Labor productivity
		Digitally enabled remote support hub for Manufacturing Operations	+68%	Average # of lot holds disposed per shift
		ML-powered predictive maintenance	-22%	Maintenance cost per million moves
		ML-powered SEM defect image classification	-17%	Defect density (non-automotive devices)
		ML-powered Wafer defect map matching	-12%	Defect rate (automotive devices)
Haier Washing Electrical Appliances (Shanghai, People's republic of China)	To meet high-end market demands while addressing regional cost pressures and quality expectations, Haier launched its Shanghai site as a new production base in 2022. Using its in-house industrial IoT (internet of things) platform and advanced technologies such as genAI-enabled 3D modelling and deep learning, the site increased production by 37%, improved delivery efficiency by 40% and cut conversion costs by 33%.	AIGC-powered virtual design assistant	-50%	Time to insight
		Causal neural network-based dynamic inner drum balance optimization model	-60%	Quality cost
		Intelligent material integrated scheduling and precise delivery based on distributed planning algorithm	-67%	Change-over time
		Multi-objective particle swarm optimization-driven auto-tuning of injection moulding parameters	-15%	Cycle time
		Reinforcement learning-driven self-adaptive welding programming agent	-75%	Welding precision
Qatar Shell GTL (Ras Laffan, Qatar)	As operator of Pearl Gas-to-Liquids (GTL) for and on behalf of the Government of Qatar, the world's largest GTL plant, built to produce 260k barrels per day of liquid hydrocarbons from natural gas, Qatar Shell GTL Limited tackled early-stage asset integrity and reliability challenges. By deploying over 45 4IR solutions, including AI for structural integrity, and empowering frontline teams, it was able to increase the site throughput by 9%, improve reliability to 99%, cut emissions by 7% and extend equipment life by up to 50% within a five-year period.	Real-time, physics-based, structural health monitoring for optimizing asset performance & integrity	+50%	Critical equipment lifetime
		Corrosion prediction and degradation modelling using AI (virtual corrosion engineer)	-37%	Field inspectors at site
		Automated condensate optimization informed by live feed from wells to onshore	-98%	Response time to system upset
		Advanced analytics enabled Air Separation Unit (ASU) optimization	-50%	Maintenance cost
		Procurement contract strategy generator through Gen AI	-30%	3rd Party Spend – Material (w/o turnaround)

Wave 14 (Productivity)

Tongwei Solar (Meishan, People's republic of China)	In the highly competitive solar cell market, Tongwei focused its digital transformation on improving power conversion efficiency (PCE) and quality. The site deployed over 50 4IR use cases, mostly based on AI – machine learning to drive process optimization, genAI-enabled maintenance, and advanced AI algorithms to analyse defects. The transformation improved PCE by 12%, cut defect rates by 41%, reduced conversion costs by 37% and lowered CO_2 emissions by 33%.	Intelligent coating and closed-loop control with CNN/DNN models	-45%	Coating thickness standard deviation
		RAG-enhanced GenAI for maintenance and OEE improvement	-53%	Mean time to repair
		Self-tuning screen printing enabled by deep learning models	-58%	Quality defect rate of printed silver paste
		Smart quality management with ResNet and XGBoost models	-45%	Quality downgrading loss
		Solar cell power conversion efficiency (PCE) optimization based on big data analysis	+12%	Power conversion efficiency (PCE)

Wave 15 (Productivity)

Site	Change-story	Top five solutions	Impact	
ACG Packaging Materials (Shirwal, India)	Operating in a highly competitive and increasingly commoditized packaging market, ACG Packaging Materials Shirwal faced sustained pressure on cost, agility and quality. The site responded by deploying more than 30 digital use cases, leveraging the Industrial Internet of Things (IIoT), generative AI, machine learning and digital twin technologies. As a result, lead times were reduced by 40%, raw material costs by 20%, defects by 71% and energy consumption by 31%, while on-time delivery in full improved by 34%.	Mission 100 - First time right production enabled by Industrial IoT and Machine learning	37%	First Pass Yield
		Smartbuy – Optimizing raw material spend with Machine learning.	-12%	Raw material cost
		Chronos - Intelligent production planning simulation & optimization powered by Digital twin and Machine learning	-42%	change over time
		Go Green – Reducing energy consumption and GHG emissions with Industrial IoT, ML, and Gen AI.	-31%	ECR - Energy Consumption Ratio
		Chanakya - Comprehensive and impactful business insights powered by Generative AI	-57%	Loss due to customer rejections
Brystol Myers Squibb (Devens, MA, United States)	Bristol Myers Squibb's Devens site, a specialist in complex biologics and cell therapies, aimed to overcome the scientific complexity and variability inherent to its business which is based on living cells. Building on traditional methods, the site merged biopharma science with AI and digital strategies to create more than 30 new use cases. This approach boosted the company's performance, resulting in a 42% reduction in New Product Introduction (NPI) time, a volume increase of over 40%, and a cut in emissions of more than 40%.	In Silico Hybrid Model enabled Process Development Accelerator	-33%	Speed to Market (Biologics)
		No-code Batch Record Platform	-83%	New Product Intro Readiness (Biologics)
		Machine Learning Batch Steering and Prediction	46%	Yield improvement (Biologics, main product)
		Global Orchestration for Personalized Cell Therapies	-31%	Lead Time, Time for blood extraction to therapy ready
		GenAI enabled Investigations Intelligence	-15%	Hands on time per deviation

Wave 15 (Productivity)

Eve Energy (Jingmen, People's republic of China)	As global competition intensifies in the battery consumer market, manufacturers face growing pressure to deliver higher quality consistency alongside significant cost-performance improvements. In response, EVE Energy Jingmen deployed over 40 digital solutions, applying AIoT, simulation, LLMs, and AI across operations. These systems enabled real-time quality diagnosis, process self-optimization and predictive maintenance, leading to significant performance gains, including reducing the defect rate by 52%, lowering unit conversion costs by 41% and boosting average overall equipment effectiveness (OEE) to 88%.	Battery voltage consistency prediction and grading via XGBoost	-83%	Return rate
		Accurate quality root cause analysis with data fusion & AI	-82%	Quality cost (rework)
		Optimization of mixing process parameters in NPI with simulation and AI	57%	CPK of slurry viscosity (Mixing process)
		Precise control of porosity across coating and calendaring process	56%	UPPH (Units per person per hour)
		Health management and intelligent assistant for equipment maintenance	-30%	Mean time to repair
Faurecia Automotive Systems (Yancheng, People's republic of China)	As Asia's largest automotive slide production site, Faurecia Yancheng faced persistent challenges from high quality costs and intense market price pressure. To overcome this, the site launched a digital initiative, deploying over 40 advanced use cases, leveraging machine learning, deep learning and generative AI to create a multimodal quality control system. The system was designed to address complex, multi-sensory challenges including noise, leading to a significant reduction in quality costs and overall cost pressure. The system resulted in a cut to customer complaints by 94%, with the associated costs down by 62.5%. Scrap costs were reduced by 75.8% and overall equipment effectiveness (OEE) increased by 10.2%.	ML-Enabled Dynamic Optimization of Stamping Die Adjustment Strategies	-35%	Change-over time
		ML-Driven Laser Welding LWM System Optimization	-79%	Quality cost
		Deep Neural Network-Based EOL Noise Testing	-72%	Labor cost
		Deep Learning and Digital Twin-Empowered Complex Slide Optical Inspection	-98%	non-perfect batches
		AI-Driven Integrated Planning Management	-99%	Planning & scheduling time
Ford Otomotiv (Yenikoy, Türkiye)	Facing global disruptions, rising customization demands for commercial vehicles and fluctuating market dynamics, Ford Otosan Yenikoy established a fully connected, data-driven value chain. The site deployed over 60 in-house digital solutions, using IoT, AI, machine learning and digital twin technologies within a unified data architecture to enable real-time data flow. This initiative allowed the factory to double its production volume, increase complexity twelve-fold, raise labour productivity by 44% and achieve a 6% quality improvement.	Intelligent Multi-Platform Production Complexity Management	+12%	OEE
		AI Powered Failure Forecasting and Maintenance Optimization; Software-Only Solution	+181%	Mean time between failure
		AI Supported Augmented Workforce: Boosting Productivity in Self-Managing, Data-Driven Frontline Operations	+8%	Labor Productivity - Value added time
		Gen AI powered Quality Platform for Rapid Root-Cause Analysis of Manufacturing issues	-91%	Time Spent per data search
		Smart Energy Management System with AI Driven Consumption Forecasting	-44%	Energy Consumption

Wave 15 (Productivity)

Haier Strauss Science & Technology (Qingdao, People's republic of China)	To enhance product reliability and capture China's healthy drinking water market, Haier Qingdao needed to overcome quality, productivity and cost challenges associated with a complex product portfolio. To solve these, the company deployed AI algorithms and 32 digital technology solutions such as adaptive temperature control for carbon rod sintering and auto-repair for Reverse Osmosis membrane adhesive defects. Along with the use of SKU-level demand forecasts for auto-replenishment, Haier Qingdao achieved a 40% reduction in defect rates, a 72% drop in quality costs and a 53% reduction in inventory turnover days.	Gradient Boosting Decision Tree enabled self-adaptive temperature control for carbon rod sintering	-68%	Scrap quality cost (carbon rod production line)
		Rapid testing of filter air tightness based on dynamic prediction	-68%	Inspection time
		Intelligent micron-level defect detection and adhesive dispensing rework for Reverse Osmosis membrane	-75%	Scrap rate (filter cartridges)
		Intelligent gas testing and root cause diagnostics of water purifier leaking issues	-72%	Quality cost (final assembly)
		SKU-level demand forecasting and intelligent replenishment for filters	-46%	Inventory cost
HiTHIUM Energy Storage Technology (Chongqing, People's republic of China)	The energy storage battery industry is facing unprecedented pressure: rapid demand growth of 48.5% CAGR, a price drop of more than 60% and the need for cell quality consistency with a performance coefficient of variation (COV) of less than 0.3%. HiTHIUM responded to this challenge by targeting three areas: near-zero defects, cost reduction and intelligent operations. By deploying more than 40 digital solutions – leveraging generative AI, machine learning and Artificial Intelligence of Things (AIoT) technologies – HiTHIUM achieved a boost to premium product ratio to 97.6% while cutting conversion costs by 37% and increasing throughput by over 200%. In addition, overall equipment effectiveness rose by 13.4 percentage points.	ANN-driven Feedback Control to Optimize Coating Quality Consistency	-50%	Coefficient of Variation
		LightGBM-based Cell Performance Prediction and Parameter Tuning	+15%	Premium product ratio
		Virtual Metrology for Connector Laser Welding Using Photoelectric Sensor and Deep Neural Network	-99%	Missing detection rate (connector welding)
		GenAI-enabled Root Cause Analysis and Closed-Loop Management for Quality Issue	-50%	Quality issue handling time
		LLM-based Rapid Root Cause Analysis and Handling for Equipment Failures	-29%	Mean time to repair
Huafon Chongqing Spandex (Chongqing, People's republic of China)	To meet customers' growing demand for customization and higher product quality despite a rapid decline in market prices, Huafon Chongqing Spandex implemented 62 digital applications. These included AI-driven high-precision process optimization, virtual sensing, AI visual inspection, digital twin technology, robotics, IoT and big data analysis. The site's digital transformation has led to a 35% decline in quality defect rate, a 60% increase in labour productivity and a 113% increase in net profit margin.	AI and virtual sensing enabled high-precision process adaptation	-39%	Waste liquid rate
		Intelligent production logistics management	+24%	Inventory turnover
		Multi-modality Digital Twin enabled HSE management	-64%	Safety & technical events
		AI-enabled product quality lifecycle inspection and proactive correction	-26%	Customer complaints
		Multivariate energy global optimization empowered by big data	-20%	Steam consumption per ton of product

Wave 15 (Productivity)

Kunlene Film Industries (Suzhou, People's republic of China)	Global food brands' demand for recyclable packaging using mono-materials with freshness protection is rising, as is the need for fast, small-batch delivery. To meet the sector's needs, Suzhou Kunlene, an Indonesian SME in China, developed more than 30 in-house digital use cases, ranging from AI-powered R&D to data-driven process control. The initiative resulted in shortening R&D lead time by 45%, fixing chronic film-break and oil-stain issues and reducing defects by 31%. It also cut the minimum order size by 83% and enabled monthly product launches, showcasing how digital technology can propel SMEs to compete on a global scale.	AI-Powered Simulator for Film Formulation & Process Optimization	-45%	R&D lead time
		Twin-AI Optimizer for Precision Speed Control in Film Production	-37%	Defect Rate from Speed Issues
		Knowledge Graph AI for Real-Time Film Break Diagnostics and Recovery	-35%	Material Loss from Film Breaks
		ML-Driven Adaptive Robotics for Precise Film Thickness Control	-25%	Scrap Rate from Thickness Variance
		AI & LLM-Powered System for Real-Time Oil Stain Diagnostics and Prescriptive Cleaning	+7%	First Pass Yield
Michelin Shenyang Tire (Shenyang, People's republic of China)	Driven by the rising new energy vehicle (NEV) market and its need for customized tyres, Michelin Shenyang saw its NEV tyre portfolio grow by 340% to over 250 SKUs. This rapid expansion put pressure on its high-speed automated production line, requiring greater agility, smaller batch sizes, faster new product introduction (NPI) cycles and higher quality. Michelin Shenyang met these challenges by deploying over 30 digital solutions, using AI, machine vision and big data. Its digital transformation boosted flexibility, trial efficiency and quality, resulting in a 71% reduction in minimum order quantity, a 51% cut in trial lead time and a 36% drop in the defect rate.	High-speed Tire Assembly Cycle Time & Changeover Time Optimization	-38%	Change-over time
		Rubber Compound Trial Production Process Parameters Recommendation for Shortening Trial Cycle	-25%	Average trial loops before mass production
		Acoustic Tire Smart Gluing for Defect and Breakdown Reduction	+23%	OEE (acoustic gluing station)
		Tire Conicity Quality Prediction and Closed-loop Parameter Adjustment	-96%	Quality Problem Response Time (avg.)
		AI Empowered Customer Delivery Order Forecasting and Pull Flow Stock Management	+82%	Inventory turnover
Siemens Numerical Control (Nanjing, People's republic of China)	Siemens Numerical Control (SNC) Nanjing operates in a highly variable manufacturing environment, managing high-mix, low-volume orders with monthly line changes and delivery timelines compressed from 45 days to 10. In response, SNC Nanjing launched a coordinated digital transformation, supported by a comprehensive toolkit spanning end-to-end digital twin technology, modular automation, advanced manufacturing operations and more than 50 AI-driven use cases. The initiative reduced lead time by 78%, accelerated time-to-market by 33%, lowered field failures by 46% and boosted productivity by 14%. It also benefitted SNC's sustainability performance thanks to a 28% reduction in Scope 1 & 2 carbon emissions.	Digital Twins bridge production design and daily operation, ensuring flexibility and closed-loop optimization	-78%	Delivery Lead Time
		"LEGO" Automation to boost flexibility and productivity in manufacturing	-93%	Production line conversion time
		Continuously evolving MOM enables quick modular development to enhance labor productivity and quality	+14%	Labor Productivity
		AI-driven test validation in edge-cloud ecosystem significantly reducing test efforts	-48%	False positive rate
		Smart energy management system enhancing infrastructure energy transparency and efficiency	-28%	Scope 1&2 emissions

Wave 15 (Productivity)

Unilever (Pondicherry, India)	Unilever Pondicherry, a strategic site in South India, faced rising demand and product complexity driven by accelerating innovation cycles. To overcome operational challenges in throughput, quality and flexibility, the site adopted digital solutions such as ML-driven process control and changeover optimization as well as AI-powered autonomous trouble-shooting and manpower forecasting. Its digital transformation enabled 25% volume growth, 23% defect reduction and a threefold increase in product variants within existing production capacity.	ML driven Viscosity control for laundry liquids	-50%	Batch Cycle time
		Real-time bar PV prediction and process optimization	-33%	Defect rate
		AI-Powered Manpower Forecasting System	+19%	Labour productivity
		Dynamic and condition-based cleaning & sanitization cycle	-40%	Average changeover time
		AI powered autonomous troubleshooting	-67%	Mean time to respond
SOCAR Carbamide (Sumqayit, Azerbaijan)	Since 2022, geopolitical tensions have disrupted regional food supply chains, driving an urgent need for fertilizer and complicating the supply of natural gas, a primary raw material. Operating at near-maximum capacity, SOCAR Carbamide needed to improve efficiency to expand output and contribute to regional food security. In response, the plant deployed 42 digitally enabled use cases, supported by an in-house AI-machine learning engine, to enable closed-loop autonomous process control and strengthen workforce support through generative AI and robotics. This initiative increased production throughput by 21% and improved natural gas efficiency by 24%.	Energy Network Optimization Platform	-18%	Energy consumption
		AI-Powered Autonomous Plant Control and Optimizer	-92%	Manual process interventions
		Advanced Simulation for Process Layout Re-Design	-10%	Defect rate
		Gen-AI-Enabled Predictive Equipment Health Monitoring	-66%	Mean time to repair
		Robotics and AI-Powered High-Risk Zone Inspection Platform	-78%	Time spent in high-risk zones for inspection
Yueda Textile (Yancheng, People's republic of China)	The textile industry faces rising demands for quality and cost efficiency but remains constrained by labour-intensive, experience-based operations. To comprehensively tackle these challenges, Yueda Textile implemented 23 digital use cases including smart logistics, digital traceability and AI-driven performance management. Its digital transformation enabled the site to move to data-based operations, boosting productivity by 421%, reducing defects by 90% and cutting conversion costs by 26%.	AI-based full-process logistics system for cotton spinning work-in-process	-92%	Logistics FTEs
		Deep learning- powered spinning process intelligent optimization and control	-86%	Yield losses
		Digital platform-powered all processes traceability	-68%	Customer complaints
		AI-based self-diagnostic equipment management	-58%	Maintenance cost (carding process)
		Low code and AI-enabled performance management for shopfloor and operations	+52%	Inventory turnover

Distinction in Supply Chain Resilience

Wave 14 (Supply Chain Resilience)

Site	Change story	Top five solutions	Impact	
Lenovo Centro Tecnologico (Monterrey, Mexico)	As Lenovo's largest site in North America, the Lenovo Monterrey site regularly managed 2,000 overseas suppliers and 52,000 SKUs across 80+ markets, alongside increasing emphasis on quality and evolving labour dynamics in Mexico. By deploying more than 60 4IR solutions, over half of them AI and genAI-enabled, the site reduced lead time by 85%, logistics costs by 42%, quality losses by 56% and carbon emissions by 30%, while boosting productivity by 58%. Today, the site serves as a global digital model factory for Lenovo.	AI Based Real-time SOP with Optimal Line Balance and Configuration	+29%	Line balance rate
		AI-based E2E Transportation Tracking & disruption Control	-43%	Average inbound logistics cost
		AI-based Supplier Connected Planning	-43%	Raw material inventory levels
		Digital Twin enabled Supply Chain Control Tower	-85%	Order to ship lead time
		GenAI enabled Manufacturing Control Tower	+42%	Average units per hour (UPH)
Midea Refrigeration Equipment (Si Racha, Thailand)	To address complex cross-border supply chains, customer quality issues and training barriers, Midea implemented 72 digital and AI solutions. These included closed-loop quality systems and GenAI-enabled workforce development. The result was a 43% reduction in order lead times, a 32% drop in customer complaints and a 62% improvement in employee qualification speed.	Automated customer complaints analytics and closed loop process quality improvements by ML & Gen AI	-32%	Customer complaints rate
		Container loading and port picking plan optimization powered by machine learning	-40%	Raw material logistics cost
		Integrated supply chain planning enabled by heuristic & genetic algorithm	-28%	Raw Material Inventory
		At-scale upskilling of multiple countries' employees enabled by Gen AI and NLP	-63%	Core skill qualification lead time
		Oversea supply transparency, risk prediction & mitigation enabled by advanced analytics	+33%	Raw material on-time arrival rate
		AI-Enhanced Product Distribution and Logistics Excellence	+12%	On time delivery
Turkish Petroleum Refineries Corporation - Tüpraş (İzmit, Türkiye)	Following the launch of its Resid Upgrade Plant in 2014, Tüpraş İzmit faced rising crude oil type diversity, product complexity and pressure from port-based sales that increased jetty congestion. In response, the refinery launched a digital transformation, integrating planning, inventory and logistics across the value chain. By deploying AI-driven forecasting and optimization solutions, the site improved delivery reliability from 85% to 95%, shortened average truck loading times by 75%, increased forecasting labour productivity by 48%, reduced CO_2 emissions by 8% and water consumption by 31%.	AI-Powered Demand Forecasting & Financial Optimization	+13%	FX Position Daily Forecast Accuracy
		Crude Oil Supply & Inventory Optimization	-5%	Inventory level
		Customer Engagement & Digital Enablement Powered by AI	+11%	Customer satisfaction score
		Smart Refining with Digital Twins and Advanced Analytics	+12%	Capacity Usage Ratio
		AI-Enhanced Product Distribution and Logistics Excellence	+9%	On time delivery

Wave 14 (Supply Chain Resilience)

Yunnan Baiyao Group (Kunming, People's republic of China)	To meet fast-changing consumer demands and manage the volatility of e-commerce and lower-tier market expansion, Yunnan Baiyao addressed inconsistent quality in key herbal ingredients and scattered planting areas. Deploying over 40 4IR solutions, including satellite sensing, industrial internet of things and large language models, the company reduced raw material return rates by 78%, inventory days by 38% and stockout rates by 30%, ensuring more stable and responsive supply.	Satellite Remote Sensing and AI Empower Yield Forecasting and Precise Procurement of Herb Material	+33%	Yield prediction accuracy
		Digital cultivation platform and multimodal LLM to enhance Good Agriculture Practices (GAP)	+38%	Premium raw material ratio
		One-step Paste Production and Rapid Changeover based on Process Simulation and AIoT	+80%	Units per hour (UPH)
		AI-driven online and offline demand forecasting	-38%	Inventory days
		AI-driven Quality Assurance and Rapid Release	-39%	Defect rate

Wave 15 (Supply Chain Resilience)

Site	Change story	Top five solutions	Impact	
Midea Kitchen & Bath Appliances (Wuhu, People's republic of China)	Midea Wuhu faced mounting complexity from a five-tier distribution network and small-batch orders, alongside rising consumer expectations for shorter lead times and improved service quality. To address these, the company engineered a direct-to-consumer value chain with the help of 113 digital use cases, 35% of which were AI-driven. Key solutions included real-time customer order management, an AI-enabled advanced planning & scheduling (APS) system and a supply chain 'control tower'. Adding to this were AIGC-powered assistance to enhance delivery and installation service quality. The initiative delivered an improved consumer experience with three major gains: a 39% reduction in end-to-end delivery lead time, a 30% drop in inventory days and an 86% reduction in the market defect rate.	One-click customer order commitment based on omni-channel inventory sharing & optimization	-30%	Inventory Days
		AI enabled E2E supply chain control tower for order level auto alarm, root cause analysis and close loop actions	-39%	Delivery Lead Time
		Direct factory to customer delivery based on intelligent order consolidation	-48%	Transportation Lead Time
		One-click advanced planning scheduling via LLM planner agent	-50%	Daily production volatility
Unilever (Hefei FTC Centre, People's republic of China)	Traditional multi-tier distribution models face growing constraints in e-commerce environments characterized by volatile demand, compressed delivery timelines and sustained cost pressure. To address these challenges, Unilever Hefei FTC distribution centre transitioned to a factory-to-consumer model, supported by 31 digitally enabled use cases, 65% of which are driven by AI and generative AI. The approach enabled capabilities such as daily demand forecasting, inventory decision-making, intelligent picking and AI-supported warehouse management. This transformation improved forecasting accuracy by 39%, reduced lead times by 75% and lowered operating costs by 24%.	Deep learning enabled e-commerce SKU daily forecasting	-36%	Slow moving stock (supply chain)
		Machine learning enabled stock and replenishment decision making	-29%	Replenishment logistics cost
		Performance management AI Agent	-80%	Issue fixing time
		Dynamic goods to man efficiency optimization	216%	Parcels per person per hour
		Intelligent parcel configuration design and optimization	-27%	Express logistics cost

Distinction in Sustainability

Wave 14 (Sustainability)

Site	Change story	Top five solutions	Impact	
Hisensehitachi Air-conditioning Systems (Qingdao, People's republic of China)	To advance its sustainability targets, Hisensehitachi deployed 27 4IR solutions at its Qingdao site to reduce emissions across the entire product lifecycle – from in-house refrigerant leakage (96% of Scope 1) and R&D operations (46% of Scope 2) to material sourcing and customer site usage (over 90% of Scope 3). Using IoT and advanced analytics, the team reduced refrigerant leakage by 56% and redesigned key processes, cutting Scope 1 and 2 emissions by 48%. Tailored control strategies for environmental parameters at customer sites led to a 28% reduction in Scope 3 emissions from product use.	AIoT Predictive Maintenance of Products to Avoid Refrigerant Leakage and Efficiency Loss	-60%	Percentage of suboptimal energy consumption (COP<4)
		Intelligent planning and scheduling for new product R&D testing to reduce energy consumption	-32%	Energy consumption in testing
		Refrigerant Emission Prevention with Digital Twin and Automated On-site Recycle	-56%	Scope 1 emissions
		Shared platform with suppliers for carbon footprint calculation and reduction target tracking	+65.2p.p.	Emission data visibility
		Smart System Design Configuration Based on 3D Modelling and Central Air Conditioner Operation Mechanism Model	+24.8p.p.	Ratio of high-efficiency products sold
Schneider Electric Distribution Center (Evreux, France)	To address resource scarcity, regulations and customer demands, Schneider Electric transformed its Evreux site into its first circular distribution centre. It implemented an end-to-end “use better, longer, and again” model that enables circularity at scale. Key innovations include a digital customer platform for ordering and take-back of over 3,000 SKUs, a data model linking products to repair, refurbishment and repackaging centres, and circular solutions in packaging, transportation and energy. These efforts reduced single-use plastic by 40% and energy consumption by 18%.	Integrated End-to-End circular model as an enabler for the company transformation	+32p.p.	Ratio of ranges covered by circular solution
		Circular Packaging Transformation including Single Use Plastic reduction	-68%	Single Use Plastic consumption
		CO2 Efficiency Improvement in Freight Transport	-44%	Freight Emissions
		Decarbonization and energy performance with smart solution	-18%	Energy consumption
		Storage and productivity optimization	-85%	CO2 Emissions for pallets not loaded on time

Wave 15 (Sustainability)

Site	Change story	Top five solutions	Impact	
Contemporary Amperex Technology Co., Ltd. (Yibin, China)	For the world's largest battery production site, rapid expansion brought a major challenge: rising carbon emissions, high energy use and an increasing value-chain carbon footprint and manufacturing costs. To solve this, the site combined an AI-driven energy transformation, micro-grid photo-voltaic storage, process innovation and low-carbon product R&D. The initiative resulted in a 56% reduction in carbon footprint and helped 13 suppliers achieve carbon neutrality certification, cutting annual Scope 1 & 2 emissions by 16% and Scope 3 emissions per unit output by 45%.	Process Innovation for High-Efficiency Solid Waste Recycling	-11%	Solid waste generation per unit
		Dry Process Recycling for LFP Scrap Electrodes Sheets	-100%	Annual acid-base solvent consumption
		ML-Driven Real-Time Equipment Operation Optimization	-8%	Energy consumption per unit of capacity
		Packaging Circular Scheduling & Design Optimization	-17%	Packaging Weight per Set
		Smart Microgrid for Peak Shaving & Valley Filling	+4.4p.p.	PV self-sufficiency ratio
Foxconn Industrial Internet (VietNam) (Bac Ninh, Vietnam)	Foxconn Industrial Internet Viet Nam (Fii VN) is a key hub for the company's supply chain resilience. Yet, it faced net-zero challenges across its value chain, with Scope 3 at 27% upstream – of which 70% come from 128 small and medium-size suppliers (SMEs) – and 36% downstream. Fii's customers aim for 50% material circularity and 100% renewable energy by 2030. To address this, Fii VN Bac Ninh deployed more than 20 digital solutions, including AI-driven green design to reduce the carbon footprint of its bill-of-materials, a generative AI carbon accounting platform for SMEs and Omniverse + AI for energy efficiency. This initiative resulted in cutting Scope 3 emissions by 22% and Scope 1 and 2 by 34%.	Product Eco-design platform to reduce BOM carbon footprint and increase material recycle rate	-16%	Scope 3 emissions
		Private Domain LLM-powered Carbon Accounting Platform for SME Suppliers	-90%	Time per report per supplier
		SMT workshop digital twin powered by Omniverse and Agentic AI to optimize energy efficiency	-60%	Planned downtime
		Health Prognostics and Cleaning Strategy Optimization of PV System with GenAI and XGBoost	+6%	Power Generation per Capacity
		Integrated AI and digital twin powered by Omniverse for efficient operation of the chilled water system	-23%	Energy Consumption (Chilled Water System)
Unilever (Gandhidham, India)	Operating in the water-scarce region of Kutch, Unilever Gandhidham has implemented a transformation focused on two critical sustainability topics: Climate and Nature. The initiative applied AI, digital twins and IIoT across the end-to-end supply chain to improve water stewardship, enable traceable palm oil sourcing, support sustainable formulations and refrigerants, strengthen disruption management and implement digitally-enabled aquifer recharge. As a result, the site cut water use by 17%, saved 6.12 billion litres of community water, reduced waste by 48%, lowered Scope 1 and 2 emissions by 90% through a transition to renewable energy, and contributed to a 12% reduction in Scope 3 emissions in the India Personal Care business, while supporting 24% growth for the site.	Digital Twin for NDPE (No deforestation, No peat, No exploitation) Palm Oil Rollout	-37%	Water consumption
		Intelligent Hardness Prediction for Low-Palm Soap Transition	-26%	Scope 3 emission (Toilet soap)
		AI Vision based Process Control for reduced Quality Waste	-34%	Material Waste
		Autonomous Closed-Loop Control for Scope 1&2 Emission Reduction	-55%	Scope 1 and 2 emissions
		Agentic AI-Powered Disruption Management for Emission Reduction	-18%	Scope 3 emissions

Distinction in Talent

Wave 14 (Talent)

Site	Change story	Top five solutions	Impact	
Haier Refrigerator Manufacturing (Chongqing, People's republic of China)	Facing high mobility and productivity improvement bottlenecks in the younger generation of workers, Haier Chongqing adopted the proprietary RenDanHeYi model, shifting from a management-oriented to a service-oriented organization. The site deployed 35 4IR talent-empowerment solutions, including personalized promotion pathways, a point-based innovation incentive platform, and team-level smart workforce planning using multi-time-series forecasting. These efforts reduced attrition by 40% and raised participation to 61%.	AI-powered key talent identification and career development platform	-50%	Key role vacancy
		Point-based innovation incentive platform to drive employee participation in improvement	-44%	Defect rate
		Proactive-service employee stability prediction & improvement	-40%	Total Employee Turnover
		Response agility of maintenance & repair teams enabled by GenAI maintenance assistant	-50%	Mean time to repair (MTTR)
		Team-level smart workforce planning using multi-time-series forecasting	-63%	Overtime

Wave 15 (Talent)

Site	Change story	Top five solutions	Impact	
AUO Corporation (Suzhou, People's Republic of China)	AUO Suzhou (AUOSZ), which employs nearly 10,000 staff, experienced high staff turnover. This was attributed to insufficient focus on workers' needs, such as flexible working options, career development and mental health support. High attrition rates put pressure on recruitment, training, production and management. The company responded by implementing a range of digital solutions including AI interviews, digital training programmes, smart scheduling, and LLM-based emotional care. As a result, more than1,000 employees were upskilled in digital capabilities, over 500 digital projects launched, attrition reduced by nearly 70% and employee engagement rose by 11%. What is more, AUOSZ achieved a 29% boost in production, successfully positioning the workforce as a strategic asset.	AI Interview for Blue-Collar Workers with Predictive Stability Modeling & Natural Language Processing	-81%	Attrition in First 90 Days (Job Mismatch / Discontent)
		GenAI & Model Factory for Accelerated Shop-Floor Maintenance Worker Development	-52%	Mean time to repair (MTTR)
		Intelligent Shift Scheduling Aligned with Health conditions & Preferences	-77%	Attrition Rate
		AgentX: AI Assistant for Frontline Leaders	-71%	Frontline leaders' administrative workload
		LLM-Based Employee Emotional & Mental Health Care	-88%	Care service response time
Schneider Electric (Wuhan, China)	Schneider Electric increased automation at its Wuhan site by 55% and expanded its product portfolio by 239%, creating major talent challenges. Initially, only 20% of the workforce was skilled in automation, onboarding took 75 days and technician turnover hit 48%. The site responded with digital apprenticeships co-designed with schools, AI-driven personalized upskilling and a genAI-augmented maintenance workforce. These initiatives cut onboarding to 15 days, upskilled 56% of employees and reduced technician turnover by 42% over five years.	Future-ready frontline talent co-cultivation program with vocational schools	-80%	Hiring & Integration LT
		AI-enabled competency management and talent development	-7.4p.p.	OEE loss from people skills gap
		Intelligent people-centric scheduling	-51%	Overtime per employee per week
		GenAI-augmented maintenance workforce	-45%	Mean time to repair (MTTR)
		SyncAI agents-empowered technical competency & NPI acceleration	-75%	Average time for NPI tasks per week per engineer