



Innovation driving excellence

Innovation is the engine that fuels our sustainable growth. We continue to explore and develop new technologies and solutions, such as clinker substitution, alternative raw materials, and green cement, that help us reduce our carbon footprint. We collaborate with premier educational institutions like IIT Delhi and Guwahati to strengthen our R&D efforts and drive dynamic advancements in our products and production processes.





FOCUS AREA

Research and development

KPIs

Corporate R&D

at Vijayanagar, Bellary

7

Quality Control labs in plant locations

6

Filed Patents

5

Granted Patents

STRATEGIES LINKED

S3 S4

RISKS

R3

R5

R6

R7

SDGs



Digitisation and automation

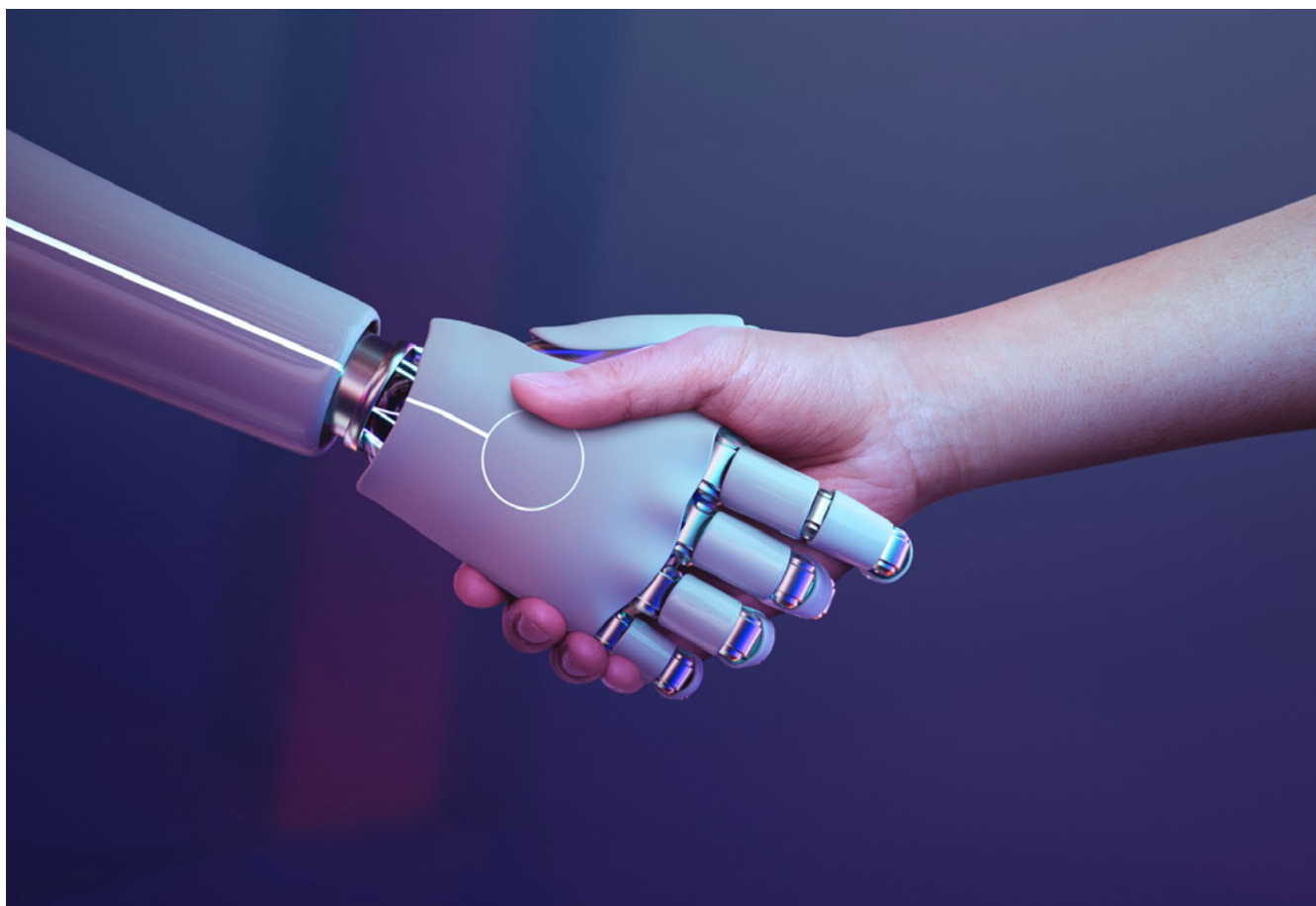
Digital logistic control tower to oversee the logistics process

Leveraging Apps

**JSW Dealer Saathi App
JSW Customer Saathi App
JSW Aikyam Mobile App**

MATERIAL TOPICS

- Data privacy and cybersecurity



FY 2024-25 HIGHLIGHTS AND DEVELOPMENTS

Process	Technological Milestones
Manufacturing	ROBOTICS LABORATORY AT SHIVA CEMENTS <ul style="list-style-type: none"> Automated Sampling: The robotics lab automates raw meal, kiln feed, and clinker sampling. It reduces manual intervention, increases accuracy, and improves safety Comprehensive Testing: It performs automated testing of raw materials, sample preparation, and chemical analysis Optimised Production: The lab's data enables optimised raw mix design based on quality and cost parameters
Marketing and Branding	DIGITAL MARKETING CAMPAIGNS SOCIAL MEDIA CAMPAIGNS JSW ONE B2B DIGITAL PLATFORM <ul style="list-style-type: none"> JSW One's jswonemsme.com platform offers a digital marketplace for construction and manufacturing materials It allows access to customers of other JSW Group companies and JSW One's growing customer base
Supply Chain	LCT (LOGISTICS CONTROL TOWER) The LCT oversees the entire order process from the receipt of orders to the delivery of our products by utilising yard management systems RFID (RADIO FREQUENCY IDENTIFICATION) AND GPS (GLOBAL POSITIONING SYSTEM) This helps tracking along automated routes and fleet optimisation
Dealer Saathi App	SUB DEALER APP <ul style="list-style-type: none"> Order placement feature for channel trades in App View & download financial statements, sales performance, order tracking, product info and has many more features ENHANCEMENTS <ul style="list-style-type: none"> Curated Experience: Dealers can view loyalty program in app and can register to avail SO/DGO Check In/Out: To track and adhere to attendance compliance for SO/DGO DMI Quantity & Points: Dealers can view DMI's loyalty points and quantity lifted in SAATHI app to boost the sales
JSW Customer Saathi App	TRADE: ORDER PLACEMENT <ul style="list-style-type: none"> Order placement feature for non-trades in Saathi App Make online payment, settle outstanding balances Enables one to place order, financial, sales performance, order tracking, product info and has many more features
JSW Sales Saathi App	ENHANCEMENTS <ul style="list-style-type: none"> Curated Experience: Dealers can view loyalty program in app and can register to avail SO/DGO Check In/Out: To track and adhere to attendance compliance for SO/DGO PD Acknowledgement: SO's can submit Dealers PD acknowledgement in Sales Saathi app reduces the manual process, thereby reducing manual interventions and improving efficiency



Process

Technological Milestones

<h3>JSW Aikyam App</h3>	<h4>ENHANCEMENTS</h4> <ul style="list-style-type: none"> The Aikyam group key tagging has been developed at contract level in Saathi app, whenever SO creates a contract the checks are placed at sold to and ship to, if any of them is tagged with an Aikyam group key, then the Aikyam project and Aikyam lead fields will be populated and mandatory to fill As a component of the Lead Scoring Project, we have developed the Lead Score Model for RMC Leads within Aikyam SFDC. The RMC Lead Score logic has been created in Aikyam SFDC in accordance with the feedback obtained from the RMC Business. Consequently, the Lead Score is automatically calculated for each RMC Lead
<h3>Influencers Loyalty</h3>	<h4>PROGRAM (ILP) AND CONTACT CENTRE</h4> <ul style="list-style-type: none"> Pragati App to reward influencers Points redemption and claims via app AP/TG/KA Dealers to be supported Access, call centre metrics and FAQs are facilitated to contact centre
<h3>Digital Ideations</h3>	<ul style="list-style-type: none"> Digital Document Management Systems (DDMS): By digitising, organising, and managing documents electronically, DDMS streamlines workflows, enhances information access, and reduces the risks associated with paper-based systems for Non-Trade business

App is a significant step forward in empowering our B2B Sales Promoters (SPs) and strengthening the MMC business, by offering them a unified digital interface for performance tracking, finance management, customer insights, and engagement tools.

SALES PROMOTER SAATHI APP
(DIRECT SALES)
Smarter Selling Starts Here

ACCESS TO YOUR FINANCIAL STATEMENTS

TRACK CUSTOMER'S SALES PERFORMANCE

ALERTS & NOTIFICATIONS

RAISE YOUR REQUESTS

PRODUCT CATALOGUE & MORE

JSW SAATHI
Your Partner in Every Sale

GET IT ON Google Play | Download on the App Store

**THE STRONGEST FRIENDSHIPS
BEGIN IN THE SIMPLEST PLACES.**

— Happy Friendship Day —

JSW Cement
Start Strong. Grow Stronger.

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World's #1 eco-friendly cement company

DIGITAL INITIATIVES PLANNED FOR FY 2024-25 AND OUTLOOK

JSW Cement Technical Academy (Phase 2)

Online Learning Portal with advance modules like Mines (Drilling & Blasting), Crusher (Jaw/Cone), Raw Mill (Ball Mill/VRM), Conveyors (Belt/Screw), Bucket elevators, Air slide, weigh feeders, Solid flow meters, Pfister/Rota scale and critical assets learning content.

Digital Vision Analytics Platform (DVAP) – JSW Shiva Cement Plant and Nagaur project

Computer vision analytics is revolutionising safety and surveillance by enabling automated, real-time analysis of video feeds to detect threats and anomalies. This technology enhances situational awareness, improves response times, and reduces reliance on manual monitoring.

Transporters App

Crucial for modern transportation and logistics companies, offering significant benefits in efficiency, cost reduction, and improved communication. They streamline operations, enhance real-time tracking, optimise routes, and facilitate better communication between drivers, despatchers, and customers.

Smart Worker App

Nandyal: Smart worker apps are crucial for modern manufacturing as they enhance efficiency, productivity, and safety by providing real-time access to information, streamlining workflows, and facilitating better communication. These apps empower connected workers with the tools they need to perform tasks effectively, leading to optimised operations and improved overall performance

Leaders Podcast

We are using YouTube to boost business reach and engagement. This guide highlights the benefits of YouTube for podcasts, such as increased exposure, SEO advantages, visual engagement, and monetisation.

Smart Depot - Inventory Management

Digital inventory management refers to the use of digital technologies to track, manage, and optimise an inventory on FIFO methodology. It involves using software and hardware to automate processes like tracking, monitoring stock levels, and managing the flow of goods, replacing manual methods like paper records and spreadsheets.

Influencers Loyalty Program App

North Markets: Mobile app offering features like direct communication, campaign management, loyalty points redemption, sales and performance tracking. Influencer apps help them connect with brands, manage partnerships, showcase their portfolio, and even track payments, streamlining the entire process.



RESEARCH AND DEVELOPMENT: PIONEERING SUSTAINABLE SOLUTIONS

At JSW Cement, we are committed to continuous innovation – developing new products and improving our existing processes in clinkerisation, grinding and quality control to maintain our competitive edge. Our partnership with premier institutes such as IIT's, IISc Bengaluru, NCCBM Ballabgarh, NITs not only focusses on applied research, but we also collaborate and support fundamental research projects focussing on energy efficiency, circular economy, sustainability and clinker factor reduction.

In FY 2024-25, our R&D product development team developed 14 new products under the construction chemicals category to support JSW Green, the construction chemical division of JSW Cement. The new products developed include tile adhesives 4 types, foundation grouts 3 types, Insta Road Cure – A pioneering product for fast repairing of concrete roads, Waterproofing compounds liquid-based and two-component systems, ready mix plaster etc.

We have leveraged our research capabilities to repurpose various steel plant liquid and solid wastes, such as hazardous waste colour coating solvent, oil-soaked cotton, waste tyres and conveyor belts etc and successfully regularised the usage of these wastes as alternative fuel in our Shiva Cement Plant. This innovation has helped reduce our specific consumption of fuel sources like Coal/Pet Coke, thereby delivering cost savings and lower carbon emissions. We plan to implement this sustainable approach across our other manufacturing locations.

Conserving Natural Resources

Our product portfolio is predominantly slag-based products, with nearly 80% comprising PSC, composite cement, and GGBS. This enables us to maintain the industry's lowest average clinker factor. We remain committed to reducing the clinker factor as a part of our broader strategy to lower CO₂ emissions further.

Important Collaborations

We have a corporate R&D housed alongside the JSW Steel R&D Centre at Vijayanagar, Karnataka. The R&D collaborates with National and International Institutes of eminence and innovative startups to deliver cutting-edge innovations. Few of our prominent research partners are –

- Indian Institute of Technology, Kanpur: Piloting of 1 TPD CCU and Mineral Carbonation of steel slag
- Indian Institute of Technology, Delhi: Pilot validation of LC3 Cement technology
- ENVICORE, USA: Activation of Iron ore slime to Supplementary cementitious material
- IIT-ISM, Dhanbad: Novel admixture for Concrete
- ECOCEM, Germany: Demonstration of ACT technology in India
- Carbon to Stone, USA: Carbonation and Activation of Steel slag

Important Trials

- A 1,200 sq ft model building for demonstration of JSW Geopolymer
- Demonstration of 3D printing technology with slag sand and Portland Slag Cement
- Pilot trials of Flash Calciner and Rotary kiln process for LC3 cement
- Plant trials with in-house developed concrete admixture
- Plant trials with Hot ESP dust at Shiva Cement
- Plant trials with slag sand to replace fine aggregate in concrete
- Plant trials with durable low-carbon cement to produce concrete



CCU (CARBON CAPTURE & UTILISATION) PILOT

In April-May 2025, JSW Cement secured approval for two CCU (Carbon Capture & Utilisation) testbeds, as part of a broader DST initiative to establish five such facilities in the Indian cement sector. Two projects were as follows:

- Mineralisation testbed (with IIT Kanpur): Converts CO₂ emissions into stable mineral carbonates to permanently sequester carbon
- Vacuum swing adsorption testbed (with CSIR IIP, IIT Tirupati & IISc): Captures CO₂ from kiln gases and integrates it into construction materials – supporting a circular, low-carbon economy

These testbeds illustrate a powerful industry-academia partnership, leveraging advanced CCU technologies to reduce emissions in a hard-to-abate sector. It marks a significant step toward India's net-zero ambitions and DST's mission to deploy scalable CCU solutions in cement plants.

Securing Quality Assurance

Our R&D centre in Vijayanagar ensures top-notch quality and consistency. Equipped with advanced robotics and state-of-the-art facilities, including individual plant quality control labs, it monitors the entire process value chain from raw material sourcing to finished product.

Instruments at Our Plant Quality Control Labs

- X-ray fluorescence and diffraction instruments
- Optical microscope
- Thermo-gravimetric analyser
- Compressive strength testing machine
- Isothermal Calorimetry
- Fourier transform infrared spectroscopy
- Advanced wet classical chemistry instruments
- Rapid Chloride permeability apparatus

Delivering Consistent Quality

- Meticulously developed specifications for various input raw materials such as limestone, laterite, red mud, steel slag, flue dust, BF slag, fly ash, gypsum, and more

- Regular sampling and chemistry determination techniques to effectively control the quality of raw materials
- Detailed assessments done to determine the glass content in slag to ensure compliance with BIS standards
- Microscopic analysis of different phases in the clinker to assess its quality and quantity
- Mineralogical and chemical characterisation, as well as evaluation of final clinker-based
- OPC and slag cement products for their physical properties, including setting time, normal
- Consistency, expansion, Blaine fineness, and compressive strength to ensure the finish product adheres to BIS specifications
- SOPs established that govern quality assurance through sampling, traceability assessment
- Analysis and calibration of instruments
- Periodic checks by third-party and BIS of clinker and finished products

DIGITALISATION

Digitalisation is at the core of our efforts to improve operational efficiency. It is driving our transformation as a tech-enabled organisation. We have implemented various digitalisation initiatives across plant operations and customer experiences for sales and payments. From partnerships with sub-dealers to direct-to-dealer enterprises, our growth strategy encompasses all channels, enhancing operational efficiency and fostering engagement across the value chain and stakeholders.

Digitalisation Strategy, Execution and Impact

Wave 1

- Laying the foundation in key functional areas
- Understanding the organisation's current state, including its technological capabilities, processes and culture
- Identifying digital trends, market dynamics, and competitive pressures
- Defining the vision, goals, and objectives of the digital transformation initiative
- Developing a comprehensive digital strategy and roadmap

Wave 2

- Digitalisation of existing processes, workflows and assets
- Focussing on digitising manual or paper-based processes, such as document management, data entry, and communications
- Optimising digital processes and workflows to enhance efficiency, productivity, and cost-effectiveness
- Leveraging advanced technologies such as robotic process automation (RPA), workflow automation, and data analytics to drive improvements
- Integrating digital tools and systems to enable seamless data flow and collaboration across the organisation
- Digitalising core functional areas like sales & marketing, operations, logistics and also customer experience



Wave 3 and Digital Vision 2026

- Shifting from incremental improvements to more fundamental changes in business models, operations and customer experiences
- Embracing disruptive technologies such as artificial intelligence (AI), machine learning, Internet of Things (IoT) and block chain to drive innovation and create new value propositions
- Exploring new revenue streams, markets, and business opportunities enabled by digital technologies
- Fostering a culture of innovation, agility, and digital literacy across the organisation
- Empowering employees to embrace change, learn new skills and contribute to digital initiatives
- Personalising customer experiences through data-driven insights, predictive analytics and omni-channel engagement
- Expanding digitally with best-in-class customer experience and logistics
- Digitalisation in manufacturing and RMC
- Sustainability, safety and security finance
- Data-driven decision-making

Guiding Principles

Strategic Transformation in Key Areas

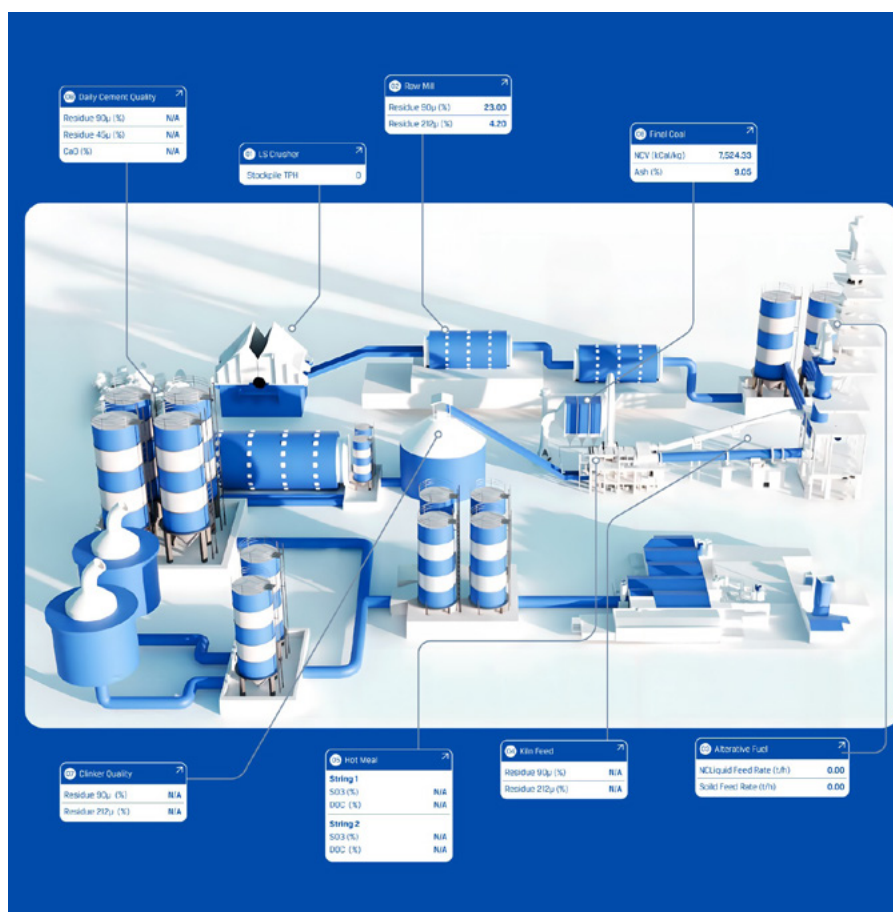
- Transform end-to-end
- Customer experience
- Excellence in logistics service and cost
- Industry 4.0/APC in manufacturing
- Transform key finance processes

Value Lens

- ROI is the key to digital investments
- Prioritise focus and investment
- Increase focus on safety and sustainability projects

Democratise Digitalisation

- Low investment and quick
- ROI projects undertaken at plant level
- Short, well-defined sprints as per 'Angle'
- Fail-fast and learn-fast approach
- Promote horizontal and vertical deployment




MAJOR DIGITAL PROJECTS

Model Digital Plant – Nandyal




Digital Vision Analytics Platform (DVAP) – In-Progress at Nandyal / Nagaur / JSW Shiva:

Designed to enhance the safety and security of plant personnel engaged in daily operations within critical areas, this platform utilises computer vision analytics, a technology that leverages artificial intelligence (AI) and machine learning to detect safety hazards in real time. A digital analytics solution is designed to identify and report safety violations, including the use of personal protective equipment (PPE), fire detection systems, safety harnesses, temperature suit monitoring, vehicle speed and collision tracking, crowd detection, and operational oversight across various facilities such as raw material handling, pre-heaters, coal mills, packing plants, silos, hoppers, mines, clinker production, and gates.



World's #1
eco-friendly
cement company

Start Strong. Grow Stronger.



Dear All,
"Safety is a team effort – we're all in this together," our Digital solution approach for **Better Safety, Better Every Day!** We are pleased to present the **Digital Vision Analytics Platform (DVAP)**, designed to enhance the safety and security of plant personnel engaged in daily operations within critical areas. This platform utilizes computer vision analytics, a technology that leverages Artificial Intelligence (AI) and machine learning to detect safety hazards in real time.

A digital analytics solution designed to identify and report safety violations, including the use of Personal Protective Equipment (PPE), fire detection systems, safety harnesses, temperature suit monitoring, vehicle speed and collision tracking, crowd detection, and operational oversight across various facilities such as raw material handling, pre-heaters, coal mills, packing plants, silos, hoppers, mines, clinker production, and gates.

We have successfully deployed the DVAP at **Vijaynagar** and **Dolvi** plants, with ongoing implementation at Nandyal and Nagaur expected to go-live by end of the 4th quarter and plan to commence implementations at JSW Shiva, Salboni, and Jaipur in the next FY.

The tangible benefits of the DVAP Project include the following:

- A total of **7,358** reported PPE violations over the past six months, alongside incidents of man down and fire detection at **Dolvi/Vijaynagar**
- An increase in PPE compliance to **85% to 96%** (real world benchmarks across industries)
- A reduction in safety violations by **50% to 60%** (real-world benchmarks across industries)
- A decrease in incident response time by **35% to 50%**, enhancing on-site safety and mitigating risks
- Improved compliance rates through automated and objective monitoring
- Implementation of real-time alerts and notifications via email, hooters & other channels ensuring immediate actions

We strive to improve productivity, efficiency, and safety, while facilitating more informed decision-making and tailored solutions within our SMART manufacturing processes.

We would remain dedicated to utilizing these advancements to propel our success in this changing environment.

Good Luck!
Team DNA
Digital 'N' Analytics



• Packer Automation – In-Progress at Vijayanagar & Nandyal Plant

We have implemented a vision analytics solution technology to analyse digital images and videos, aimed at addressing major efficiency challenges in wagon and truck loading at the Packing Plant. This includes an AI-based camera system designed for the automation of the packing plant. Additionally, we have incorporated Automatic Label Print Inspection to ensure regulatory compliance. Furthermore, we utilise Automatic Bag Jamming Detection to enhance loading efficiency, eliminate demurrage, and reduce instances of bag bursting.



JSW Cement
Start Strong. Grow Stronger.

World's 1st eco-friendly cement company

Dear All,

We've all heard the adage, "A picture is worth a thousand words". I am glad to share that with the successful execution of **AI Based Camera System for Packing Plant Automation at Salboni, West Bengal**. As a part of Manufacturing 4.0 strategic journey, we have adopted vision analytics solution technology to analyse digital images and videos to tackle the critical operational efficiency challenges in wagon & truck loading at Packing Plant.

The everyday challenges of packing unit is frequent bag jamming on belts which leads to delay in loading, manual inspection to capture unlabelled bags (2%-3%), manual counting dependency, packaging & loading efficiency and reporting systems.

Computer Vision Analytics makes this a digital reality.

- AI based camera system for **packing plant automation**
- **Automatic Label Print Inspection** to maintain regulatory compliance
- **Automatic Bag Jamming Detection** for improving loading efficiency, eliminating demurrage, and reducing bag burst
- **100% Accurate Bag Counting** for managing shipments
- **Automatic MIS and video backed data** for shipment tracking and management

Tangible Benefits

- Approx **1250000** auto bag counts per month with **100%** accuracy
- Approx **15M** automatic bag counts per year
- **Real-Time alert & notifications** on bag jamming detection & label print inspection
- Data driven & real-time reporting MIS system

As we continue to embark on our Digital Transformation journey under the Manufacturing 4.0 strategy, I wanted to take a moment to outline our focus on integrating intelligent digital technologies into our manufacturing processes. This approach encompasses a range of cutting-edge technologies, including industrial IoT networks, AI, Big Data, and automation. We aim to enhance productivity, efficiency, and flexibility while enabling more intelligent decision-making and customization in our **SMART manufacturing and supply chain operations**.

Let's stay committed to leveraging these advancements to drive our success in this evolving landscape.
Good Luck!

Sumeet Chadha
CHIEF OF MANUFACTURING

• Energy Forecasting – Dolvi Plant:

We have designed an efficient energy procurement system. By predicting demand more accurately, energy can be procured at optimised rates, leading to considerable cost savings. Enhanced forecasting allows better planning, leading to smoother operations and less reactionary measures reducing all manual coordination among teams.

DIGITAL PROJECTS COMPLETED

• JSW Cement Technical Academy (Phase 1) – Online Learning Portal:

This online learning platform is designed for plant personnel and plays a vital role in contemporary education and career advancement, providing flexibility, accessibility, and an extensive array of learning materials. Online portal platform serves as a centralised hub for distributing educational content, promoting communication, and allowing for tailored learning experiences.



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WELCOME

Step into the **JSW Cement Technical Training Program** on Cement Manufacturing for an insightful journey! This course offers a deep dive into the cement production process, from raw materials to final packaging.

The JSW Cement Technical Training Program includes four focused modules on cement manufacturing, blending theory with practice for operational excellence.

Module 1
Introduction to JSW Cement outlines the company's history, mission, and role in sustainable construction, instilling pride in JSW's innovative approach.

Module 2
Basics of Cement Manufacturing Process covers raw material extraction to grinding, providing a clear foundation for production processes.

Module 3
Cement Kiln Energy Efficiency and Operations explores kiln operations, fuel management, and technologies for energy efficiency and lower environmental impact.

Module 4
Optimizing Cement Operation - Clinker, Slag Grinding, and Packaging focuses on optimizing clinker, slag grinding, and packaging for quality and efficiency.

Details to Enroll to this exciting program certification.. Coming Soon!
Look out for this Space!

• **Wagon & Rake Tracking System – Salboni:**

A GPS tracking system designed for JSW-owned railway rakes and wagons at Salboni plant offers real-time location information, thereby improving operational efficiency and security. This system facilitates the monitoring of wagon positions, route tracking, and effective asset management, tackling problems such as theft and delays in returns.

• **Packer Automation – Salboni & Dolvi Plant**

Vision Analytics guarantees 100% accurate bag counting for effective shipment management. Lastly, we provide Automatic Management Information Systems (MIS) and video-supported data for comprehensive shipment tracking and management.

• **Sales Promoter App: Non-Trades**

The project aims to build mobile application for building Sales Promoter user journeys. This aims to provide a digital platform to NT Sales Promoter of JSW business which will improve their productivity, efficiency and enable them to plan their activities strategically with data-backed decision-making. This mobile app will enable the Sales Promoter to Place & Track orders for their NT customers – review their sales performance, financial details, and Check Daily sales and collections etc.

• **JSW Saathi App: Sales & Marketing**

- **Curated Experience:** Dealers can view loyalty program in app and can register to avail
- **SO/DGO Check In/Out:** To track and adhere to attendance compliance for SO/DGO
- **Mitra Chatbot:** Virtual assistant to provide 24/7 customer support, reduce operational costs, enhance customer engagement, and offer personalised experiences
- **DMI Quantity & Points:** Dealers can view DMI's loyalty points and quantity lifted in Saathi app to boost the sales
- **TDS/TCS:** Dealers can submit TDS/TCS in Saathi app to go paperless
- **PD Acknowledgement:** SO's can submit Dealers PD acknowledgement in Sales Saathi app reduces the manual process

DIGITAL PROJECTS PLANNED

- **JSW Cement Technical Academy (Phase 2):** Online Learning Portal with advance modules like Mines (Drilling & Blasting), Crusher (Jaw/Cone), Raw Mill (Ball Mill/VRM), Conveyors (Belt/Screw), Bucket elevators, Air slide, weigh feeders, Solid flow meters, Pfister/Rota scale and critical assets learning content.

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- **JSW Saathi App Enhancements:** Sales & Marketing

- **EKYC:** Dealers/Customers can submit all KYC documents online through Saathi app
- **Balance & Quantity Confirmation:** Dealers/Customers can confirm or raise reconciliation on quarterly & monthly basis on balance & quantity
- **Escalation Metrics:** Raise requests from Dealers are timely action to support dealers
- **Cost & Vaasthu Calculator:** To estimate project costs, enhancing transparency and improving customer experience
- **Debit & Credit Payment Option:** Dealers/Customers can make DC/CC payments
- **Online Branding Audit:** To ensure branding support is fulfilled to Dealers



JSW Cement's digital focus areas

Sustainability



Mining



Supply Chain



Manufacturing



Sales and Marketing



Finance

Additional Focus

Safety, security, governance

Digitally-enabled sustainability and R&D

Continuous learning culture

Standard and AI/ML-enabled analytics



Anticipated Impact



Increased sales



Increased asset availability



Improved safety



Cost optimisation



Emission reduction



Connected worker

Additional focus

Integrated IT+Plant Automation+Digital

- IoT, IT/OT In
- Data sciences, AI/ML
- Intelligent Analytics, BI+O1
- Edge-to-cloud
- Digital depots
- Leveraging startup ecosystem

Horizontal Vertical Deployment

ENABLED BY:

Digital depots

- Digital learning
- One Digital team

People Upskilling

- 2-tier training
 - Mass awareness
 - Specialised deep-dive
- Digital Central (Group)
- Digital Confluence (Group)
- Digital Exchange (Group)

KEY OBJECTIVES OF DIGITALISATION AND HOW WE ARE MEETING THEM

Objective	How and why
Operations improvement with advanced operations	<p>How: Packer Automation – computer analytics with AI-based cameras to track & monitor wagon/truck loading of cement bags</p> <p>Why: To improve operation efficiency and increase productivity by eliminating manual process of bag counting & label inspection process at packing plant</p>
Operations intelligence using AI-ML	<p>How: IT-OT integration and advance process controls</p> <p>Why: To provide actionable recommendations to address issues and augment incomplete or inconsistent data, leading to more accurate insights and informed decision-making. Developments in machine learning, automation and predictive analytics are helping operations managers improve planning and streamline workflows.</p>
Improve sustainability to achieve Net-Zero goals	<p>How: Energy Forecasting & Scheduling at Dolvi Plant</p> <p>Why: A combination of strategies focussed on reducing carbon emissions is essential. These include using alternative raw materials and fuels, improving energy efficiency, and exploring carbon capture and storage (CCS) technologies</p>
Safe and smart workplace	<p>How: Digital Vision Analytics Platform – AI-based cameras to monitor, track & alert the safety violations at critical operational locations at plant.</p> <p>Why: To ensure safety & security of plant personnel.</p>

DIGITALISING OUR OPERATIONS

Digitalisation is crucial for us to drive greater efficiencies in the production process. Our implementation of digital initiatives is helping us improve plant productivity, reduce our environmental footprint, increase capacity utilisation, improve quality and reduce consumption of resources.

DIGITAL TECHNOLOGY AS A CATALYST

We have the potential to elevate EBITDA per tonne by 8-10% by giving prominence to the three pivotal pillars of cost, performance and growth to achieve operational excellence.

JSW CEMENT (NANDYAL) CAN IMPROVE THE BOTTOMLINE BY LEVERAGING THE THREE KEY LEVERS OF OPERATIONAL EXCELLENCE

Addressing demand variability:

Cost-reducing operational and/or product costs	Performance- Driving operational performance (Triple bottom-line – Profit, People, Planet)	Growth-Capacity expansions, increased market share, etc.
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OBJECTIVES

Objective 1:

Operations improvement with advanced operations

Objective 2:

Operations intelligence using AI-ML

Objective 3:

Improve sustainability to achieve Net-Zero goals

Objective 4:

Safe and smart workplace

PREREQUISITE – ESTABLISHING DIGITAL FOUNDATION

Automated

Integrated

Intelligent

HARNESSING DIGITAL EFFICIENCY

We use digitalisation to address hidden sources of inefficiency and production setbacks, aiming to optimise production rates while minimising energy consumption and maximising product quality

Quarrying raw material	Quarrying
Crushing	Power balance
Prehomogenisation and raw meal grinding	Dust production
Preheating	Waste heat use Dust production
Precalcining	Kiln fuel consumption
Clinker production in the rotary kiln	Clinker and cement production, total clinker consumed
Cooling and storing	Non-kiln fuel consumption
Blending	Power balance (indirect emissions)
Cement grinding	
Storing in the cement silo	

At our cement plants, we monitor energy consumption, CO₂ emissions, and output quality, affected by factors like humidity, vibration, and temperature. Employees manually adjust around 50-100 variables every 10 minutes. Automated root-cause analysis helps process experts identify production losses and receive actionable recommendations to address inefficiencies like energy waste, reduced clinker quality, lower throughput, and kiln feed variations.



CASE STORY

MODEL DIGITAL PLANT – NANDYAL

With surge in demand for sustainable manufacturing globally, JSW Cement has also pioneered the future with its model digital plant at Nandyal. This transformative initiative redefines cement production by integrating IoT and AI, connecting people, processes and assets to set new benchmarks in innovation, efficiency and sustainability.

The Challenge

We faced critical operational hurdles as follows:

Fragmented information silos: Isolated systems and limited visibility hindering IT-OT integration and efficient decision-making

No unified data access: Scattered data sources and delayed analytics impacting proactive response to inefficiencies

Energy inefficiencies: Energy intensive processes lacked advanced monitoring complicating optimisation efforts

Inconsistent quality control: Manual processes struggled to maintain consistent quality without real-time predictive tools

Collaborative barriers: Disconnected systems impeded collaboration between plant teams and leadership, reducing strategic alignment

Vision: Model Digital Plant

The model digital plant is a seamlessly connected ecosystem where machines predict maintenance needs, processes are optimised for throughput and quality and waste is minimised. By unifying data access and digitising expertise, it enables smarter decision-making, reduces cost and lays the foundation for continuous innovation.

Transformation across Departments

Maintenance: A leap to predictive maintenance

Proactive systems: IoT-enabled predictive maintenance systems monitor equipment vibration and temperature, predicting failures to minimise downtime, production losses and maintenance costs.

Real-time KPIs: Tracks MTTR (Mean time to repair), MTBF (Mean time between failures), stoppage hours and work order execution in real-time, replacing manual excel reports with digital records for trend analysis and data-driven decisions

SAP integration: Real-time dashboard sync with SAP to track maintenance costs against budgets, enhancing resource planning and financial transparency

Electrical and Instrumentation

360-degree visibility: Dashboards provide mill status and specific power consumption (SPC) with visual alerts for deviations, enabling swift action

Energy insights: Track energy source contributions (Solar/ WHRS / Thermal / Grid) with cost trends and solar forecasting for optimised planning

Section-wise analytics: Monitors idle hours, shift-wise SPC, TPH and kW with root cause analysis for energy optimisation

Golden parameters: Optimises specific heat consumption for energy efficiency

Quality: Ensuring consistency

Process control: AI-driven charts monitor process stability and buildup risks in kilns, ensuring quality

Quality forecasting: AI/ML models predict C3S, enabling proactive kiln adjustments for consistent quality

Real-time dashboards: Deliver instant quality parameter updates for rapid interventions

Digital logbooks: Replace manual excel records with digital storage of cement quality data

Impact

JSW Cement's model digital plant at Nandyal revolutionises manufacturing by integrating advanced technologies, driving operational excellence and supporting sustainability goals. It positions JSW Cement as a global leader in innovative and sustainable cement production.

DRIVING GREATER ORGANISATIONAL SYNERGY

Our digitalisation efforts enabled us to streamline business processes and strengthen our engagement with dealers and sub-dealers, creating stronger business relationships. They also help us serve our customers better and improve customer satisfaction. This dual approach has improved our operational efficiency.

SAATHI APP

JSW Cement prioritises fostering strong relationships with its dealer network, such as through the Saathi App suite. JSW Dealer SAATHI app and JSW Customer Saathi app enable trade and non-trade customers to place orders, make payments and track orders real time. The Sales Saathi App allows the sales team access to the dealer history and financial health and also empowers them to address dealer grievances in timely manner. The suite of mobile applications streamlines communication, improves operational efficiency and enhances transparency across our dealer network, translating into stronger partnerships and a more robust distribution network for JSW Cement.

AIKYAM APP KEY FEATURES

Aikyam is a single mobile app for multiple business verticals across JSW Group. The JSW Aiikyam mobile application empowers our sales managers to identify valuable sales opportunities by monitoring upcoming infrastructure and housing projects. This tool leverages comprehensive data collected across JSW Group's diverse business divisions to provide actionable market intelligence.

CYBERSECURITY AND INFORMATION SECURITY GOVERNANCE AT JSW CEMENT

At JSW Cement, we have adopted a structured cybersecurity and information security governance framework to ensure the confidentiality, integrity, and availability of corporate data and operational technology (OT) systems. Our approach aims to proactively safeguard our digital infrastructure while enabling secure business growth.

Cybersecurity oversight is embedded across multiple levels of the organisation. The Board-level Risk Management

Committee provides strategic direction and oversight, while a dedicated Head - Information Security at the Group level drives implementation and continuous improvement of cybersecurity initiatives.

Our defensive architecture includes next-generation firewalls (NGFWs), unified threat management (UTM) systems, and segmentation strategies. In line with industry best practices, we have implemented cloud security risk assessments, multi-factor authentication (MFA), real-time security event monitoring, and phishing simulations to enhance both technical protection and employee awareness.

Additionally, our cybersecurity program includes:

- Deep and Dark web surveillance and threat intelligence feeds
- Secure remote access controls
- Continuous vulnerability assessments and penetration testing (VAPT)
- Defined escalation channels (email, phone, in-person) to report incidents
- A clearly articulated Information Security Policy, accessible to all employees

To cultivate a culture of security, we mandate cybersecurity awareness training for all employees through interactive e-learning modules, with periodic assessments. Reported incidents and policy violations are handled through a formal disciplinary process, in accordance with the severity and risk impact.

We maintain a Business Continuity Plan (BCP) and Incident Response Plan (IRP) that are tested regularly, ensuring organisational resilience. Our Information Security Management System (ISMS) is ISO 27001 certified, and we conduct independent third-party audits and simulated cyberattacks to evaluate and enhance our preparedness.

PRIORITIES FOR FY 2025-26

Brand-Building Activities

At JSW Cement, we consistently invest in a diverse range of marketing and brand-building initiatives to enhance our brand visibility and drive demand. Our efforts span across digital campaigns, sports partnerships, and traditional media, including billboards and point-of-sale promotions.

Partnership with Neeraj Chopra

We proudly announced our brand association with Neeraj Chopra, India's Olympic gold and javelin throw champion, under the campaign #MazbootiJoSaalonSaalBadhtiJaye.

This collaboration reflects shared values of strength, precision, and excellence. As our brand ambassador, Neeraj Chopra symbolises the durability and quality that JSW Cement stands for. His inspiring journey aligns with our commitment to performance, reliability, and long-lasting construction solutions – creating a deeper, more authentic connection with our consumers.



Tie-ups with Sporting Leagues

Cricket Sponsorships

Through strategic media sponsorships, we've built powerful brand visibility in India's favourite sport:

- Border-Gavaskar Trophy
- India vs. England T20 Series
- Ad presence across GEC and News channels

TV Reach: 384 million

JioStar Reach (formerly Disney+ Hotstar): 178 million

Pro Kabaddi – Haryana Steelers

Our sponsored team, Haryana Steelers, emerged champions of Pro Kabaddi League Season 11. Kabaddi's growing popularity, especially in Tier II and III cities, gives us a sharp edge in reaching relevant audiences from the construction and infrastructure sector.

Key Highlights:

- TV Reach: 200.7 million
- OTT Reach: 198 million
- Most Engaged Team in December 2024: 16.8 million+ engagements
- Most Watched Team: 223 million+ video plays in Dec 2024
- Highest Win Rate: 73% (16 wins out of 22 league matches + playoffs)

Festive and Topical Social Media Campaigns

We actively celebrate festivals and special days through our social media platforms, strengthening consumer engagement across regions.

Total Reach: 16 million+ across all platforms

Regional Marketing Initiatives

We connect deeply with local audiences through:

- Regional ads in vernacular languages
- Outdoor branding (hoardings, wall paintings)
- Dealer-level branding and promotional materials

Recognition

JSW Cement has once again been as an ET Now Iconic Brand of India 2024.

This recognition reaffirms our commitment to building a strong, sustainable, and trusted brand for the future.