

Powered by AiR

One of Singapore's leading ready-mix concrete and cement players is leveraging artificial intelligence, cloud and big data to transform its legacy brick-and-mortar business. Since embarking on its digital transformation journey in 2014, Pan-United Corp has unlocked significant cost savings across its vertical business operations by using the AiR intelligent system.

■ by *Pan-United Corp Ltd, Singapore*

Singapore-based ready-mix concrete and cement company Pan-United Corp Ltd has used its domain knowledge from two decades in the business, combining artificial intelligence (AI), data analytics, algorithms and the sensor technologies to create an end-to-end system to optimise its operational performance. Looking for a name, Pan-United Corp used a metaphorical figure of speech and simply coined it AiR – Artificial intelligence for Ready-mix concrete. AiR harnesses data to seamlessly run concrete operations – from labour utilisation, truck and plant capacity, to quality testing and materials availability.

For Pan-United Corp, AiR was especially crucial. Singapore is one of the most built-up smart cities in the world and therefore, the scarcity of land, labour and natural resources makes operational efficiency paramount to any business. In Singapore's highly-competitive ready-mix concrete sector, the company could ill afford to be anything but efficient.

Digital transformation

Innovation was crucial to its long-term viability. Pan-United Corp embarked on a digital transformation journey in 2014 and five years later, envisions its future as a technology company in the concrete and logistics space. Since its first digitalisation steps, the company has unlocked as much as 45 per cent in cost savings across its vertical business operations through the use of AiR, a cloud computing optimisation system built completely in-house to transform its legacy brick-and-mortar operations.

AiR has been further developed to be scalable, and is offered in the form of software as a service (SaaS) to other cement and concrete companies to use it. The platform is modular yet customisable. It can be plugged into a business operation with minimal disruption to seamlessly

AiR bridges technology with strong domain knowledge to optimise business operations underpinned by sustainable principles



overcome operational inefficiencies.

Ken Loh, Pan-United Corp's chief operating officer, comments: "Algorithms and machine learning are built in to automate the supply chain, operations and logistics requirements. For example, parameters can be set based on priorities such as cost versus time, plant and truck assignments, and even priority customer projects for any time of the day. Companies that grapple with hundreds of products with different costings can use the AiR platform to navigate the data points of their systems to maximise automation potential."

Mr Loh added that the company centralised its operations in a command centre built around the AiR platform "which has tremendously improved the

work environment for our operations team. Users of the AiR platform can expect regular upgrades incorporating new features to the platform to improve and deliver high-quality service to customers."

Digital transformation of the concrete and cement industry

AiR holistically addresses 'pain points' in the supply chain to reap productivity gains for users. It provides consumerised experiences to the customer. The modular AiR covers a company's entire value chain – from raw materials, batching plants, right down to customer relationships.

Among its many features, AiR automates raw material replenishment and uploads delivery orders seamlessly to the truck drivers' personal mobile

devices. Dispatch personnel are no longer needed at the stockpile areas and cement terminals.

For each delivery, the plants and delivery routes can be selected automatically based on preset parameters.

Truck assignments are automated based on a transparent system, eliminating bias. Safety is enhanced as drivers who have reached a preset working hour limit are not assigned. AiR is able to manage a large fleet of trucks, freeing up valuable personnel for more customer engagement.

Onsite quality control results are filed and reported in real-time to the customer. Tedious paperwork is eliminated.

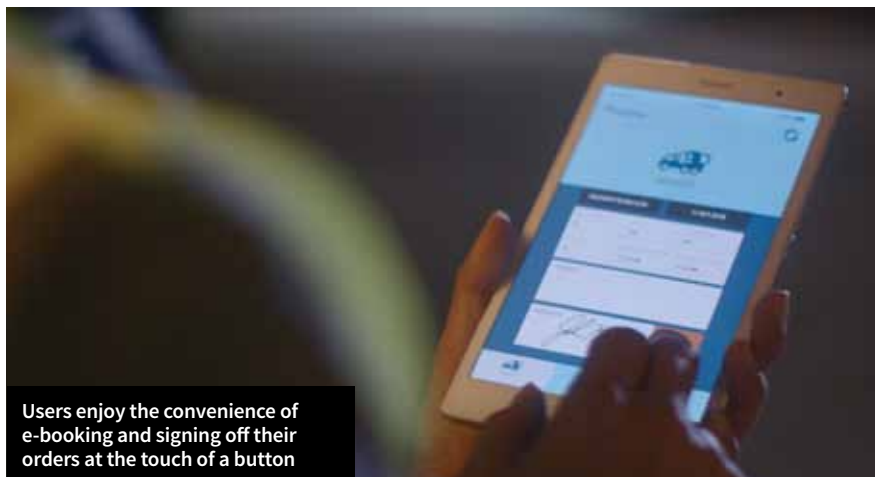
Putting customers at the heart of all operations, the AiR platform integrates billing and customer relationship management. Customers can also customise their own data without having to manually key in the information.

The digital way forward

To remain relevant and competitive in the long term, cement and ready-mix concrete companies must be receptive to adopting new technologies in all aspects of their business. They can take into account the three key approaches from Pan-United Corp's experience to develop a robust and dynamic digital transformation strategy:

1. Develop solutions with the customer in mind

A customer-centric attitude in developing technology-based solutions is imperative. The AiR platform is an example of excellent technology-enabled solutions that provide easy access to essential production and financial data. The active data helps decision-makers make informed decisions and conveniently manage



Users enjoy the convenience of e-booking and signing off their orders at the touch of a button



AiR incorporates Pan-United Corp's domain knowledge of the cement and ready-mix concrete industry. While the digital platform has a modular structure, it takes a holistic approach to optimising every stage of the company's operations

ongoing project transactions. The AiR system has resulted in a greater competitive advantage and improved operational efficiency for Pan-United Corp as a user. Importantly, it has also raised the bar on customer convenience to a level never provided before.

2. Sustainability as a business driver

Companies must step up to include sustainable solutions to enable long-term competitiveness and resilience. For example, the precise scheduling of trucks for on-time delivery in the AiR fleet optimisation module has helped Pan-United Corp to increase resource efficiency and reduce carbon emissions associated with heavy vehicles plying the roads. The increase in plant utilisation reduces the need for more plants, which in turn reduces the

input resources needed for ready-mix concrete production.

For many concrete companies, the amount of paper pushed in the issuance and receipt of delivery orders and invoices is a major burden. AiR enabled users to eliminate this issue by creating electronic delivery orders and invoices. The sustainability gains for Pan-United Corp have been substantial, including savings of 13tpa of paper.

3. Technology has to work in tandem with skilling talent

Companies must proactively reskill and upskill their employees to realise the full potential around the use of technological solutions. The success behind technology adoption depends on the employees' ability to accept the disruptive impact on their roles, and to see gains from enhancing their knowledge and skillsets. Pan-United Corp continually emphasises holistic training of its personnel to stay ahead in the game.

Sustainable growth on two fronts

Pan-United has synergistically woven these strategic approaches to unlock greater business value by optimising efficiencies and accruing cost savings across functions. Its management team is able to focus on sustainable growth on two fronts – strategically strengthening its core business while exploring opportunities laterally and vertically. ■