

Big Investment, Bigger Returns: How Cement Plants Can Cash In by Modernizing Equipment

New equipment built for your facility is the key to eliminating downtime, optimizing material flow and meeting increased production demands.

By Andrew Parker, President, CDM Systems, Inc.

THIS WHITEPAPER WILL PROVIDE:

- Projections supporting the near-term growth of the cement industry
- The value of modernization for operational efficiency and beating production challenges
- How equipment standardization drives profitability





The North American Ready-Mix Concrete Market (RMC) is set for substantial growth, projected to surge to nearly \$85 billion by 2028.

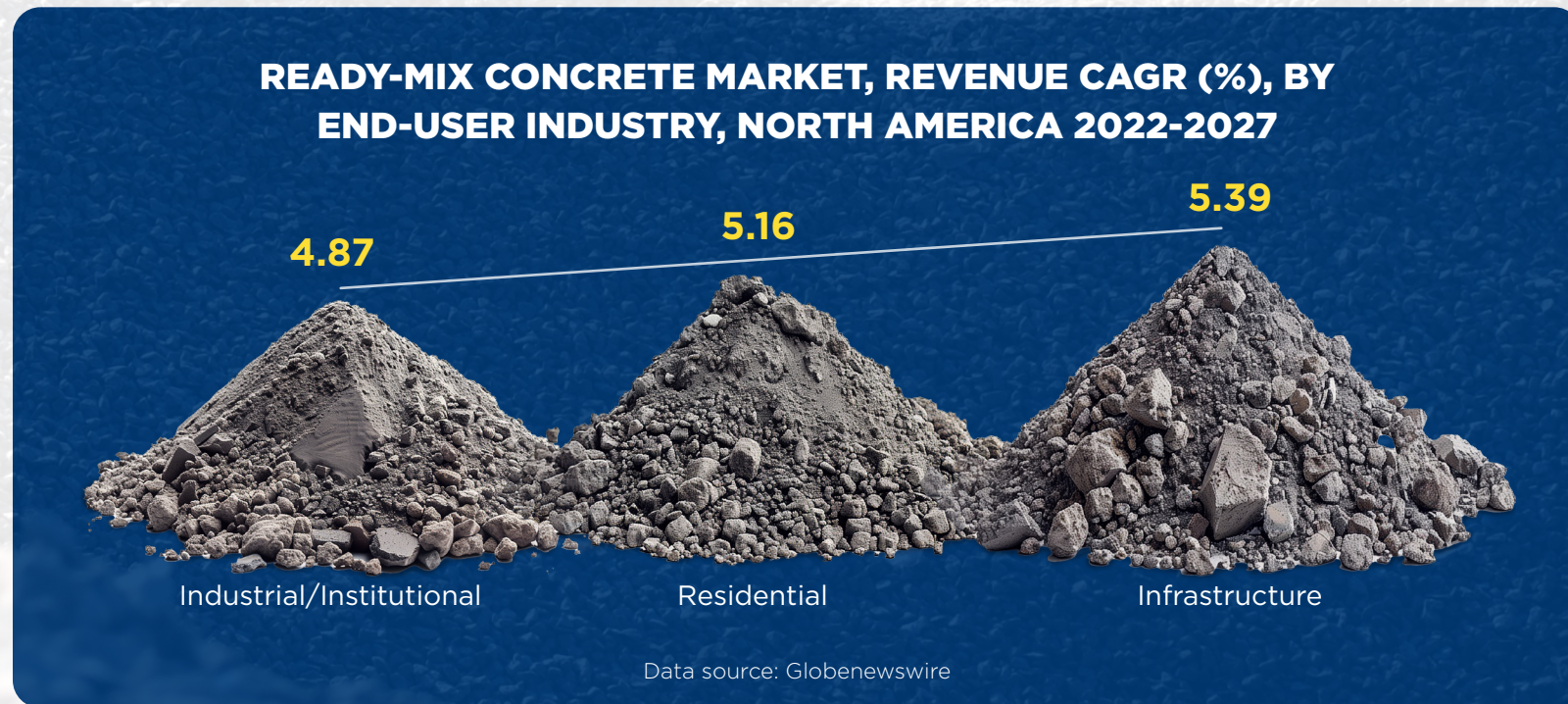
A yellow dump truck is shown from a low angle, tilted upwards as it unloads a large pile of light-colored gravel. The truck's body is bright yellow with some white and grey markings. The gravel is piled high, creating a large, textured mound. In the background, there are more piles of gravel and some green trees under a clear blue sky. The truck's large black tires are visible on the right side.

Cement plants can boost profits by
improving material flow, eliminating
downtime from older or misapplied
equipment and optimizing production.



This is why modernizing the
conveying system is so crucial.

Because concrete is the second most-used substance behind water, it's no surprise the global concrete industry is flirting with overcapacity for production due largely to increased demands and rising prices. This includes the North American cement market, where predictions are for a steady surge – particularly in RMC – through 2027-2028.



The uptick is reflected in the revenue growth of three key sectors: industrial, residential, and infrastructure – the latter of which has some 40,000 projects planned across all 50 states in the U.S., as part of the Infrastructure Investments and Jobs Act.

Cement operations can prepare to meet these increasing demands and reap the profit rewards by modifying their operational systems. This begins with modernizing – and standardizing – equipment for each stage of the production process.

The Value of Cement Plant Modernization

Cement plant layouts emphasize the critical importance of the raw material transfer process, which includes properly implementing key capital equipment like belt and drag chain conveyors, bucket elevators, and metering bins.

Older plants often have equipment inefficiencies or operate in improperly controlled conditions. This results in higher-than-normal energy use, such as heat loss at the kiln or strain on conveyors that are unable to efficiently transfer large volumes of abrasive or hot material.

Problems like these can disrupt every stage of cement production, from mining the raw materials all the way to the finished product.

If operations don't implement the right equipment strategy, conveyors – especially older conveyors – can easily be misapplied for the material volume, composition, temperature or the facility layout. This will lead to several problems:



Higher energy and operating costs



Inefficient production



Increased downtime from equipment breakdowns



Unsafe conditions for operators

Thus, the biggest opportunity for cement plants to increase revenue, lower energy costs and improve production is through standardizing and modernizing equipment.



Benefits of Equipment Standardization

Efficiency gives cement plants a competitive advantage, and this starts with installing conveying equipment tailored to handle difficult raw materials. But more than that, standardizing equipment should be a key part of any strategic modernization project.

With so many stages of cement production and high costs of materials, traditional methods for maintenance, repair, and operations (MRO) at most facilities are becoming obsolete.

Cement operations that also standardize their equipment can realize several critical benefits, including:



Seamless spec processes



Direct OEM support



Reduction of competitive bids



Reduced maintenance inventory



Ease of maintenance



Less waste



Simplified operator training

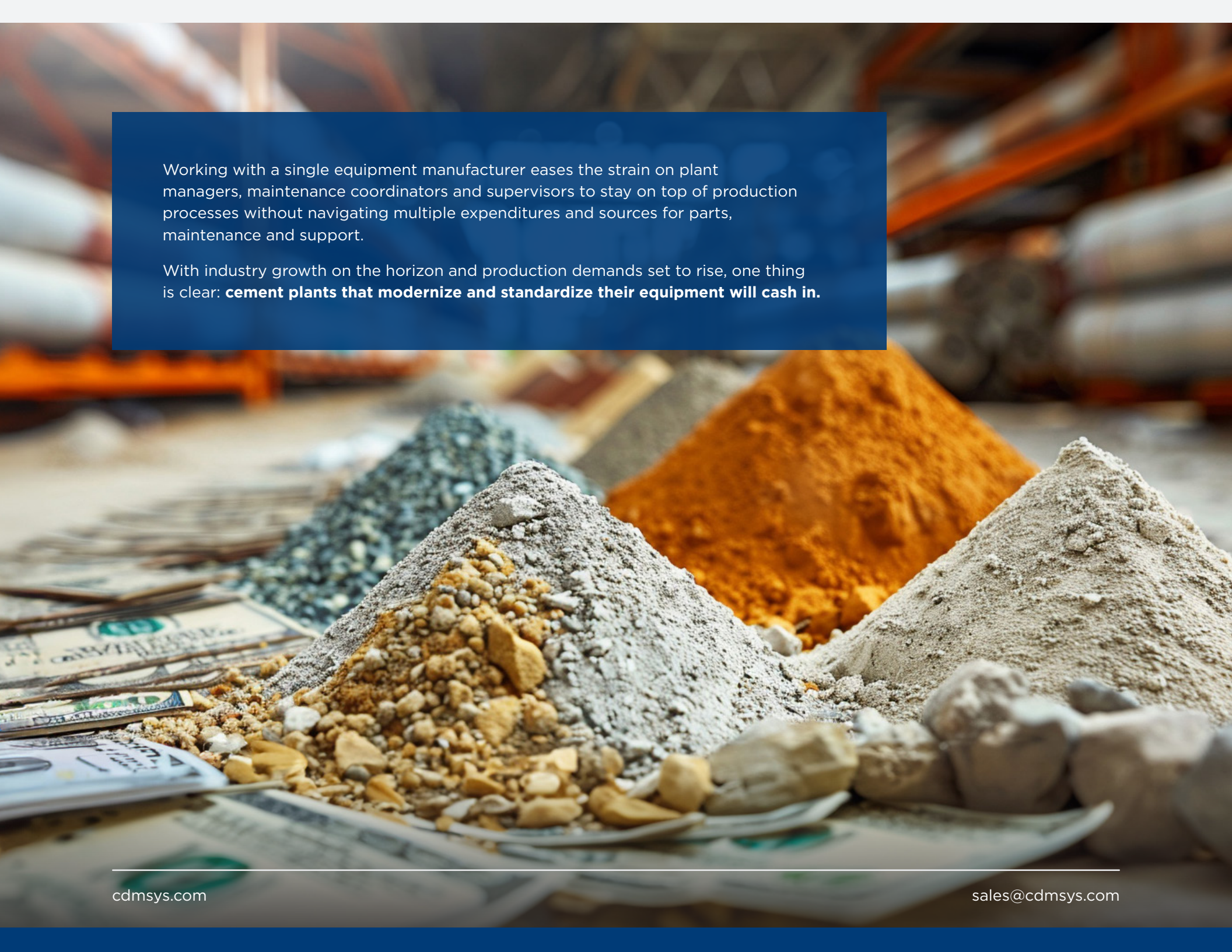


Energy savings

Meeting Fugitive Dust Regulations

Another major benefit to equipment standardization is utilizing modern, enclosed conveying systems. This provides dust control, improves efficiency at material transfer points, keeps the plant safe and maintains EPA compliance.





Working with a single equipment manufacturer eases the strain on plant managers, maintenance coordinators and supervisors to stay on top of production processes without navigating multiple expenditures and sources for parts, maintenance and support.

With industry growth on the horizon and production demands set to rise, one thing is clear: **cement plants that modernize and standardize their equipment will cash in.**

SUMMARY

- The North American cement industry is preparing for near-term growth
- Modernizing the plant is a worthwhile investment with significant profit potential
- Equipment standardization can reduce expenses, maximize material flow, streamline production, improve performance and minimize downtime



About the Author

Andrew Parker is President for CDM Systems, Inc. He has more than 20 years of experience in the bulk material handling industry. He oversees operations including conveyor design and development.

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