



## Maintenance, repair, operations **STRATEGIC SPENDING**

MRO budgets will grow from \$701 billion in 2021 to \$897 billion by 2028, according to a study by Markets N Research.

MRO, or Maintenance, Repair and Operations, usually covers supply chain management, industrial machine up-keep, technology advancement, artificial intelligence, Internet of Things, and preventative maintenance solutions.

BinMaster sensors and software bring technology improvements with a quick return on investment. Besides replacement parts, companies budget for future needs like an inventory management system for tank, silo, and bin installations.

"It's a good idea to check in with us at the end of the year," said Nathan Grube, BinMaster Vice President Sales, Central Region. "We'll look at ways to get ahead of supply chain delays and get strategic with your bulk material management."

Manufacturing is projected to be the fastest growing MRO segment due to increased spending on Industry 4.0 and digitization. Spending often results in a significant return on investment through improved supply chain management, boosted productivity, and lower operating costs.

Grube said nowadays, customers with tank, bin, and silo level sensors consider MRO spending earlier in the year.

"People realize the importance of a tight bulk inventory system, especially with supply demand and shortages in the past few years," Grube said. "Our customers want resilience. They want to lower the risk of production stoppages. Nowadays, that is more important than just-in-time spending philosophies."

According to Supply Chain 24/7, manufacturers who traditionally focused on lean principles have experienced supply shortages, especially in the past two years. They said MRO risk-averse strategy helps ensure a continuous supply and availability of parts that have a major impact.

### **Advantages to Strategic MRO Spending**

- > Better Efficiency
- > Lowered Costs
- > Competitive Advantage
- > Reduce Inventory Expense
- > Improved Productivity Planning
- > Lower Repair Costs and Delays
- > Reduced Transportation Expense
- > Increased Capital Efficiency
- > Return on Investment from Improved Service



Industry	Bulk Material	Sensors	Software	Applications
 <p>Agriculture Farming Livestock</p>	Grain Flour Beans Fertilizer Seed Liquids  Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D sensors Ultrasonic Flow detector	BinCloud BinView AgriView Binventory FeedView 3D Multivision	Prevent overflows Process control Inventory management Remote monitoring Monitor piles Flow detection Bin aeration Dust detection Aeration Ag Chemical Storage
 <p>Bioenergy</p>	Corn DDG Biomass Wood pellets Wood fiber Forest residue  Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic Flow detector	BinCloud BinView Binventory 3D Multivision ResinView	Prevent overflows and outages Process control Inventory management Remote monitoring Flow detection Slurry tank detection Measure DDGS
 <p>Cement</p>	Sand Gravel Clinker Rock Powder  Bins, clinker silos, tanks, piles, domes, chutes, crushers	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Plugged chute detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Prevent overflows and outages Process control Inventory management Remote monitoring Monitor piles and bunkers Inventory domes Plugged chutes Measure crusher levels ESPs or clinker silos Prevent conveyor overloads Silo aeration
 <p>Food processing</p>	Brewing Foodstuffs Solids Slurries So much more...  Silos, mixers, batching tanks, conveyors, pipelines	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView AgriView Binventory 3D Multivision	Prevent overflows Inventory management Remote monitoring and VMI Process control Sanitary level measurement Detect levels in mix or slurry tank Detect levels on conveyors Flow detection Silo aeration
 <p>Mining</p>	Lump coal Ores Aggregates Fine alumina powder  Silos, crushers, conveyors, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Inventory management Monitor piles Prevent overfills or outages Detecting plugged chutes Measuring inventory in domes Level measure in crushers or bins Prevent overloading Process tanks Remote monitoring Silo aeration Dust detection
 <p>Plastics</p>	Resins Flakes Powders Granules Regrind  Silos, bins, containers, hoppers, tanks	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView ResinView Binventory 3D Multivision	Prevent silo overfill Eliminate outages Inventory management Remote monitoring Vendor managed inventory Flow detection Bin Aeration Dust Detection