



Bulk Inventory Management:

# A Strategic Approach in the Digital Age

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## Digital Transformation in Bulk Inventory Tracking

Not long ago, bulk material management involved dirty clipboards, dangerous climbing, and long tape measures to **determine grain, plastic, and cement** levels in a bin or silo. Enter digital transformation which replaces antiquated processes using high-tech instruments like BinMaster level sensors and cloud software.

Digital transformation improves supply chain resilience, automation, accuracy, and efficiency, benefiting people effectively collaborating in a digital system.

BinMaster technology fits into the category of **Internet of Things (IoT)** which describes a wireless network of devices embedded with sensors for the purpose of connecting and exchanging data. IoT is automating manual tasks in the manufacturing industry.

### IoT inventory sensors and software:

- > Provide insights for **data-driven decisions**. Increase efficiency and drive down costs
- > **Shorten lead times** for production
- > Reduce **carrying costs** and last-minute purchases
- > **Reduces waste** on bulk inventory that could spoil
- > Integrates inventory data to **Enterprise Resource Planning** systems
- > Streamlines transportation and **timely ordering**
- > Requires **less labor** and guesswork



## Mitigating Risks in Manual Measurement

\$120,000. That's the average direct and indirect cost of a workplace injury in 2022. Bigger than money is the devastating toll an injury can take on employees and families.

Sensor technology can eliminate the activities surrounding the measuring of bulk material inventory in bins, silos, and other containers that require walking, climbing, and working at heights. **More hazards** include opening and closing heavy access doors and entering silos poses a threat of entrapment.

"A lot of companies assemble parts, sell them, and move on. We believe we're offering solutions that can **save lives**. Our employees know they are involved in a greater purpose, and we're very proud of that."

*-Scott Hudson, BinMaster Executive Vice President, Sales & Marketing*

Eye-opening safety stats:

- > 300,000 **ladder injuries** in the U.S. (Bureau of Labor Statistics)
- > 211,000 **slip, trip, and fall injuries** - U.S. (National Safety Council)
- > 44,400 accidents involved **falling from heights** (Height, Lift & Shift)

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CHECK  
BULK MATERIAL  
INVENTORY SYSTEMS

## Achieving End-to-End Visibility through Sensors

Multiple people and departments can collaborate when reports are cloud-shared. It's a key component of Industry 4.0 and 5.0. Internet of Things (IoT) describes wireless devices, like **BinMaster sensors**, installed to connect data with cloud access.

With cloud-based reports, employees can collaborate on **inventory balancing**, planning, and control to ensure the right amount of inventory is available to **avoid lost orders** and, your procurement team can make sure money is not unnecessarily tied up in safety stock. Aligning the physical location and logistics of inventory helps companies **better control costs and improve profits**.

"We've put a lot of effort into developing **cloud software to present sensor data** in a way that managers can maximize decisions. We realize that different materials require different sensors and software to account for workplace conditions, company goals, and even the bulk density of the product."

*-Mike Mossage, BinMaster VP East Region*

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## Leveraging Data to Manage Cash, Carrying Costs

The cost of storing materials along with related salaries, transportation, handling, **taxes, insurance, depreciation, and shrinkage** could represent 10-30% of total inventory costs, according to Investopedia.

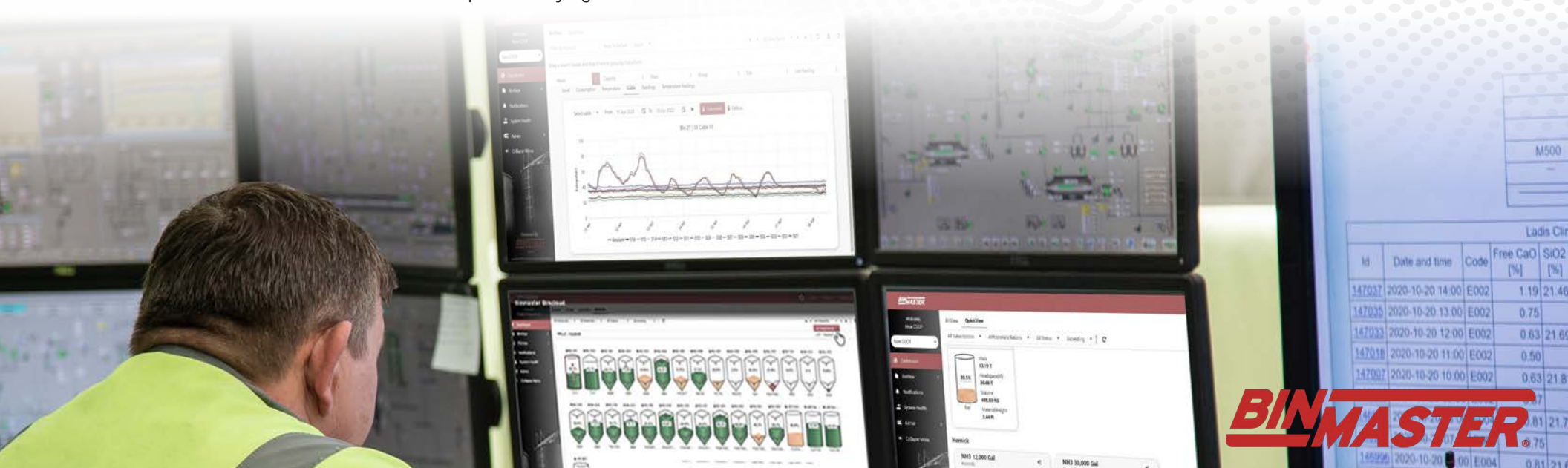
One major manufacturer, for example, stores and uses alumina. Their carrying costs are \$1.50 per year, per 100 pounds. They consume 8 million pounds which means their carrying costs are \$120,000 per year. They constantly monitor inventory to ensure funds are not tied up in inventory while ensuring production continues.

Reducing carrying costs can **boost profits**. Managers base inventory on the economic situation (when the currency depreciates, purchasing power decreases). Properly inventory handling can **reduce storage costs**. An understanding of quantity and timeline might open opportunities for **long-term agreements with suppliers** as well.

"We've been upgrading our BinCloud software to show historical measurements and we can provide a **trendline** to help anticipate when materials will run out. Those are tools that can really help minimize carrying costs."

*-Nathan Grube, BinMaster VP Central Region*

In any environment, accurate measurements, ordering, and **historical trending of bulk materials** is critical. BinMaster sensors fit that bill. Material managers can see bulk inventory in their tanks, silos, and bins. Using **BinCloud software**, historical data can help forecast material needs so production does not stop and carrying costs are minimized.



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147018	2020-10-20 11:00	E002	0.50		
147017	2020-10-20 10:00	E002	0.63	21.8	
146999	2020-10-20 09:00	E004	0.81	21.7	



## Adopt a Digital Culture

"Digital transformation is not simply a technological change, but a **cultural movement** that involves a profound shift in how organizations think about and approach their business models." (Jiao, 2022)

A new business focus has emerged to define ways to benefit employees, sustainability, fairness, and human interactions. **Industry 5.0**, here we come! Industry 5.0, builds on 4.0 automation and process achievements. 5.0 points to sustainable, human-centric goals and asks, "are we supporting future societal values?"

### Industry 5.0 values:

- > **Human-centric:** promotes talents, diversity, and empowerment
- > **Resilient:** agile and resilient with flexible and adaptable technology
- > **Sustainable:** lead action on sustainability and respect planetary boundaries

### Working towards Industry 5.0 one might ask:

- > Do we prioritize the well-being of workers as the center of our production?
- > Are we working towards **machines and humans work symbiosis**?
- > Are we resilient and able to provide prosperity?
- > Does our production respect the boundaries of our planet?
- > Are we focused on **research and innovation**?
- > Do we need new Industry 5.0 technology?

### BinMaster meets Industry 4.0 and 5.0 goals

- > **Human-centric:** BinCloud inventory software brings storage silo-level measurements to employees' phones and PC. In short, sensors and BinCloud software **replace physical work** like climbing a ladder to measure a silo and provides cloud-based reports so people can make informed decisions.
- > **Resilient:** Rather than help withstand adverse events, BinMaster systems can **prevent problems** like overfills and unplanned orders due to lack of information.
- > **Sustainability:** BinMaster sensors and software provide accurate bulk material measurements to **reduce waste and energy** use in the long haul.

## Solving Wasted Hours During Worker Shortages

Analysts at Goldman Sachs said in the first quarter of 2022, there were 4.6 million more jobs than there were potential workers. According to a Deloitte study, the **skills gap** will result in 2 million unfilled jobs by 2025. Many of those jobs are considered dangerous, tedious, and simply unpleasant physical work. **Automation offers solutions.**

BinMaster **bulk material inventory automation**, for example, measure silos, tanks, and bins and feeds data to managers for **smart decision-making**. The automation removes a need for employee to walk, climb and maneuver at heights.

BinMaster Level sensors play a leading role and **cloud-based software** and phone apps are compatible with a wide range of **sensors and measurement technologies**. Their versatility lends them to use with **silos, bins, and tanks** of different shapes and sizes, storing all types of solids, powder, and liquids including **plastic, cement, grain, feed, ingredients, fuel, and more.**

### Time demonstration

*How many bins and silos are you measuring?*

- 4 minutes Employee **walks** from the control room to the silo & back.
- + 2 minutes Employee **climbs** 50-foot-ladder, up & down.
- + 4 minutes Employee pulls heavy roof **inspection door** atop silo & drops a tape measure.
- + 5 minutes Employee **records** measurements & **communicates** to manager, fills form or spreadsheet.
- = 15 minutes That's **one** measurement, **one** silo, **once**.





# Are You Ready to Learn More?

Contact us at [info@binmaster.com](mailto:info@binmaster.com) or visit [www.binmaster.com](http://www.binmaster.com)



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BinMaster designs and manufactures reliable, solid-state point and continuous bin level indicators, control systems, and sensors for liquids, powders, and bulk solids. BinMaster offers BinCloud, a secure, flexible and easy-to-set-up software for monitoring your bins, silos, and tanks.