



## Digital Silo

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Invest in **real-time monitoring** today, avoid **millions** in losses tomorrow!



OVERDESIGN

CO<sub>2</sub>  
FOOTPRINT  
REDUCING

SAFETY  
EXCELLENCE

## Digital Silo

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- Average loss per incident: **\$2–10 million**
- Damage to people, production, and reputation
- Insurance claims are rising — inspections are often reactive, not predictive

## Each Collapse Costs Millions and Can Be Fatal

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### GRAIN AND CEMENT SILO = CONSTANT DYNAMIC LOADS

- **Thousands** of off-farm silos and **millions** of on-farm silos currently in operation
- Around **47% of all stored grain** volume is held in off-farm facilities with average storage capacity **1.2 million bu per silo**



## Limitations of Traditional Monitoring

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Traditional inspection and monitoring methods can't keep up with the real-world behavior of silos



- Design models **rarely** reflect actual load patterns experienced during operation
- Foundation settlement and concrete curing **can shift** alignment and **compromise stability**
- Inspections are often **reactive, not predictive**

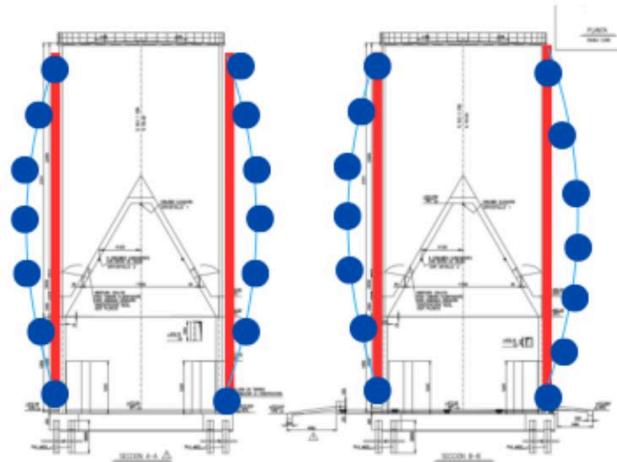
- Manual visual checks cannot **detect internal stress** or **microdeformations**
- Annual measurements provide information **too late** to enable timely intervention
- Valuable structural data remains **offline and unused**



## Turning Each Silo Into a Self-Reporting Digital Asset

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- Installed network of wireless sensors
- Vibration | Tilt | Temperature | Load | Settlement
- 24/7 monitoring of structural response under real loads
- AI analytics detect patterns invisible to human eye



## The Solution

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- Sensors capture real-time structural data
- Data is sent securely to the cloud
- AI models analyze and highlight potential risk zones
- Users receive early alerts and visual stress maps on their dashboard



## Data-Driven Protection That Pays Off

- Prevent failures **before** they occur
- Reduce **insurance risk** and downtime
- **Optimize** maintenance schedules
- Extend structure lifespan by **100%**
- Guarantee full compliance with **safety and ESG standards**



### Contact Adventum Tech

For more details, custom configurations, or pilot projects:

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