



The 23rd International Asset Facility and Maintenance Management Conference

Data-Driven Decisions and the Use of Technology Digital Twins in Decision-Making



12-14 January 2026

Riyadh, KSA

www.omaintec.com #OmaintecConf

Organized by



Executed by



Outline



Industry context and motivation



Practical implications for engineering practice



The decision problem in data-rich environments



Key findings and call to action



Decision-Ready Twins and the 3Ds Framework

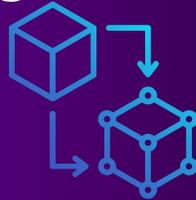
Industry Context



**Rapid growth of
asset and
maintenance**



**Widespread use
of analytics and
digital twins**



**Rising
expectations for
data-driven
decisions**



**Persistent
decision
challenges remain**



The Core Problem



Digital twins focus on monitoring and prediction



Insights are disconnected from action



Decision logic often remains implicit

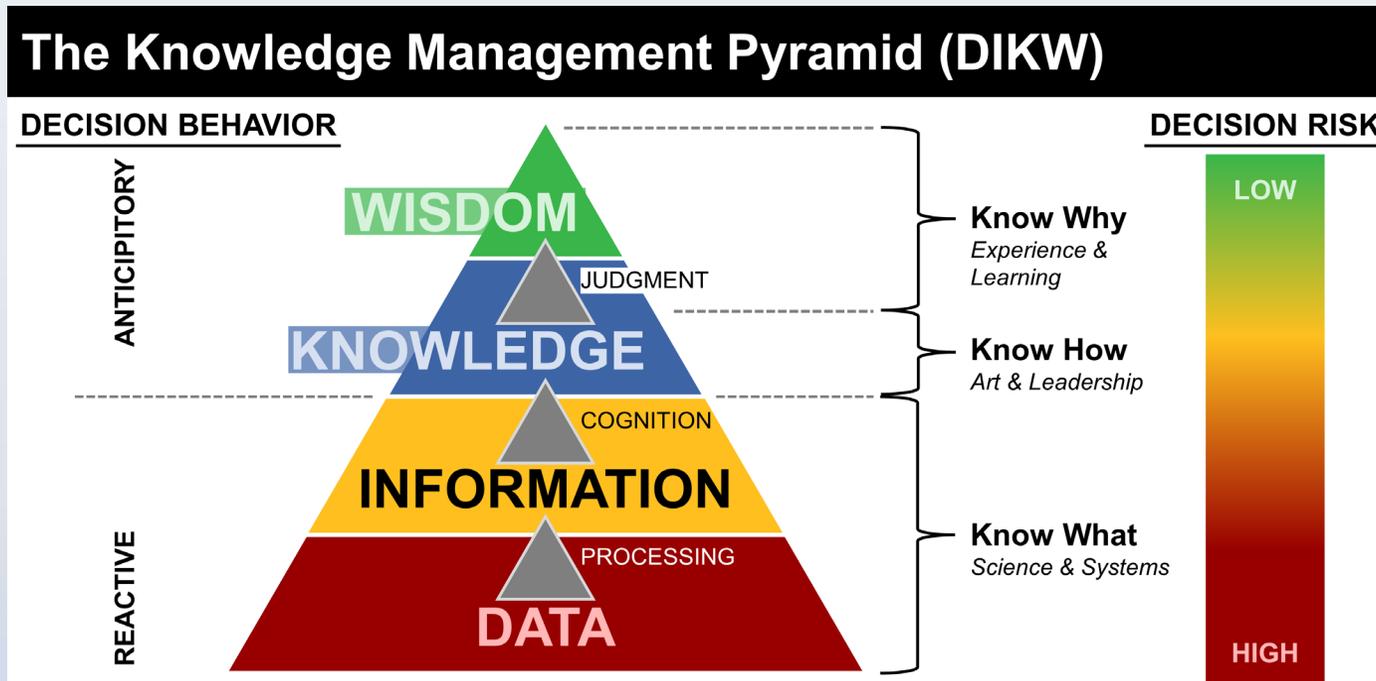


Engineers face data overload, not clarity

Key Issue: A gap between analytics and decisions

Data Is Not the Same as Decisions

- Data and information describe what is happening
- Decisions require judgement and trade-offs
- Context and uncertainty must be considered
- Most systems stop before the decision point



Limits of Current Digital Twins



Strong at simulation and prediction



Limited visibility of uncertainty



Weak at decision support



Low trust in automated recommendations

Key Insights

- More data does not guarantee better decisions
- Automation does not remove uncertainty
- Decision quality depends on system design



Insight: Digital twins must be decision-ready by design

Decision Ready Twins

Digital twins are designed to support decisions

- Integrate:
 - Data and analytics
 - Decision logic
 - Human judgement
 - Organisational context

Shift: From predictive tools to decision systems

The 3Ds Framework



Diagnose

- Transform raw data into contextual insight

Decide

- Combine analytics with engineering judgement

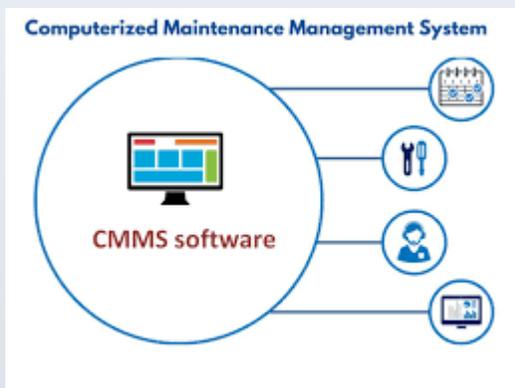
Demonstrate

- Explain, validate, and learn from decisions

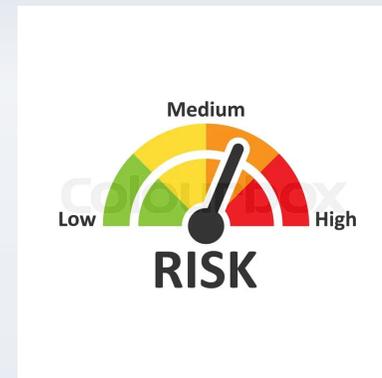
Practical Implications



Embed digital twins into maintenance workflows



Integrate with CMMS and planning systems



Make uncertainty and confidence visible



Retain human-in-the-loop decision making

Final Findings



Decision readiness is the next evolution of digital twins



Value comes from decisions, not predictions



Trust and transparency are essential



Human judgement remains central

Call to Action



Stop designing digital twins as dashboards



Design systems around decision pathways



Evaluate tools against decision readiness



Focus on clarity, trust, and accountability



The 23rd International Asset Facility and Maintenance Management Conference



Contact at Email- skn.fmp@gmail.com

 12-14 January 2026

 Riyadh, KSA

www.omaintec.com         #OmaintecConf

Organized by

OMAINTEC In Partnership with
المجلس العربي لإدارة الأصول والمرافق والصيانة
Arab Asset, Facility and Maintenance Management Council

 **SAFMMA**
الجمعية السعودية لإدارة الأصول والمرافق والصيانة
Saudi Asset, Facility & Maintenance Management Association

Executed by

Organizational Partner
TSG | EXICON.
The Specialist Group • شركه مجموعه المتخصص