
AWS
re:Invent

MFG201

Terex improves quality and optimizes manufacturing with AWS

Scott McNeal
Vice President, IT
Genie – A Terex Company

Michel Putnik
Head, WW Industrial Manufacturing
AWS

AWS re:Invent

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2020 recap



Keep everyone safe and healthy



Predict the future!



Manufacture with predictable outcomes



Do it more accurately than ever before



Digital everywhere



Do more with less



Lot size of one

Innovation with AWS

Hankook

"In the future, we plan to spread AI technology to the entire development process, ranging from material selection, design, tire test, production, and mass production…"

Expected 50% reduction in compound development period

SAMSUNG ENGINEERING

Successfully streaming high-performance EPC 3D design apps with Amazon AppStream 2.0

4-11x increase in analysis speed and 24% cost savings

Fastenal

"We boosted production by more than 100 hours each month in the first three months alone. There's no more educated guessing or finger-pointing; there's a solid reason behind everything and every decision we make."

LG Electronics

Utilize AWS IoT and serverless architecture to connect tens of millions of home appliances with LG ThinQ

Hyundai Construction Equipment

Moved smart product system to AWS to establish equipment / part demand forecasting system, improving prediction and quality control

GE APPLIANCES a Haier company

Remediation time reduced from three days to 80 minutes

Manufacturing solutions

PACKAGED SERVICES AND PARTNER SOLUTIONS, PURPOSE-BUILT FOR INDUSTRY

Product design



- Computer-aided engineering
- Semiconductor electronic design automation
- Product lifecycle management on AWS

Smart factory



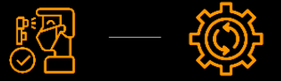
- Industrial machine connectivity
- Amazon Virtual Andon
- Industrial data platform
- End-to-end smart factory
- Improving OEE: from preventive to predictive maintenance
- Improving OEE: from process monitoring to optimization

Supply chain



- Demand planning with Amazon Forecast

Business operations



- SAP on AWS for manufacturing

Who is Genie?

GLOBAL LEADER IN AERIAL PRODUCTS AND SERVICES

- >50 years of product innovation
- **Better, faster, and safer** work on even the most challenging of jobsites
- **Serving a variety of industries** and applications worldwide



The Genie legacy

- Safety and values come first
- Industry leader
- Innovation with a purpose
- Culture that pursues excellence



Challenges



Significant sensitivity to seasonality, cyclicality, and macroeconomic changes measured in weeks, not years

Opaque data visibility diminishes business-wide continuous improvement

IT has been a stranger on the manufacturing floor

Building on strong (analog) roots



Deep lean, innovation, and continuous improvement DNA



Approachable and collaborative ops and engineering teams



Unwavering customer centricity

DIGITAL FOUNDATION

- Apps ~100% cloud-hosted
- No blocking application monuments
- Fragmented business intelligence and offline analytics

Drawing the digital manufacturing battle plan



Start with the customer and a problem, not the solution

Problem awareness

Lean into scalable, pliable services with very few pillar business systems

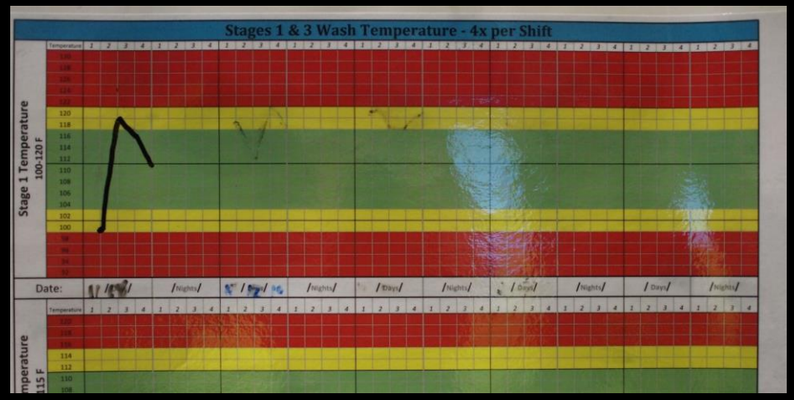
Use case: Paint pilot



Challenge

Limited problem-solving capability and velocity on continuous process created by

- Low-resolution, manual instrument readings
- Tedious historic trends analysis
- Inability to contextualize environmental factors

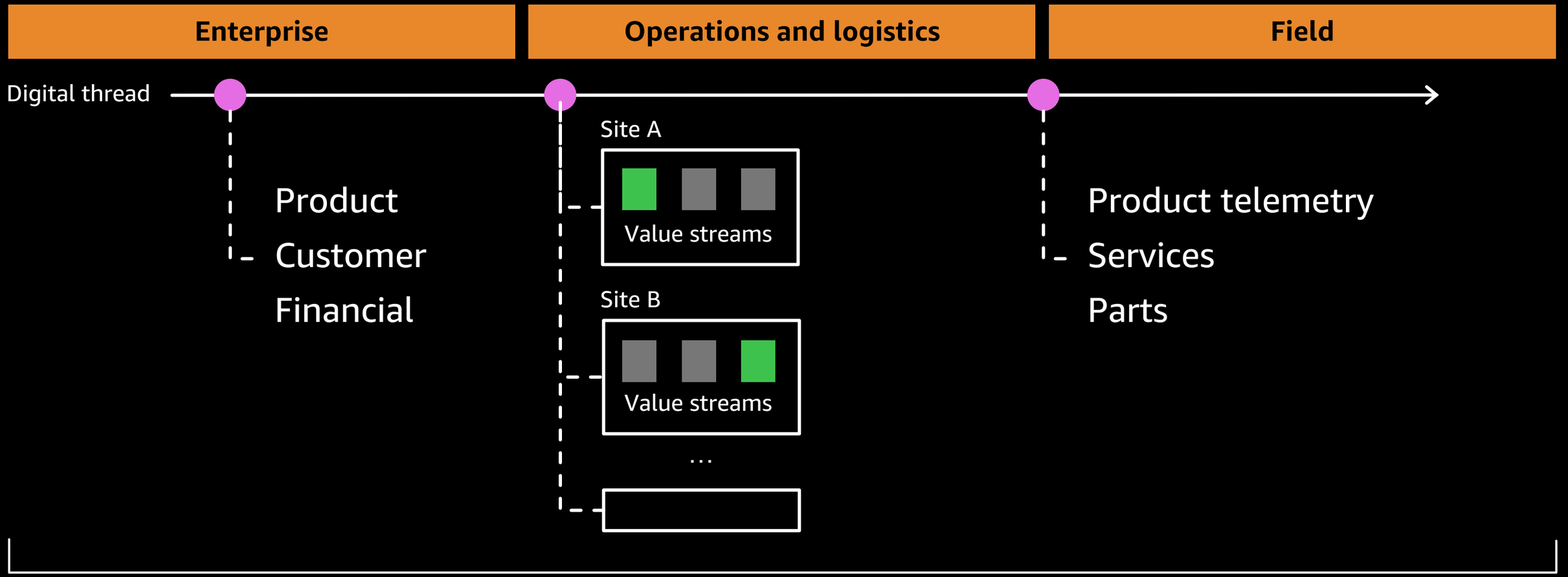


Technical solution

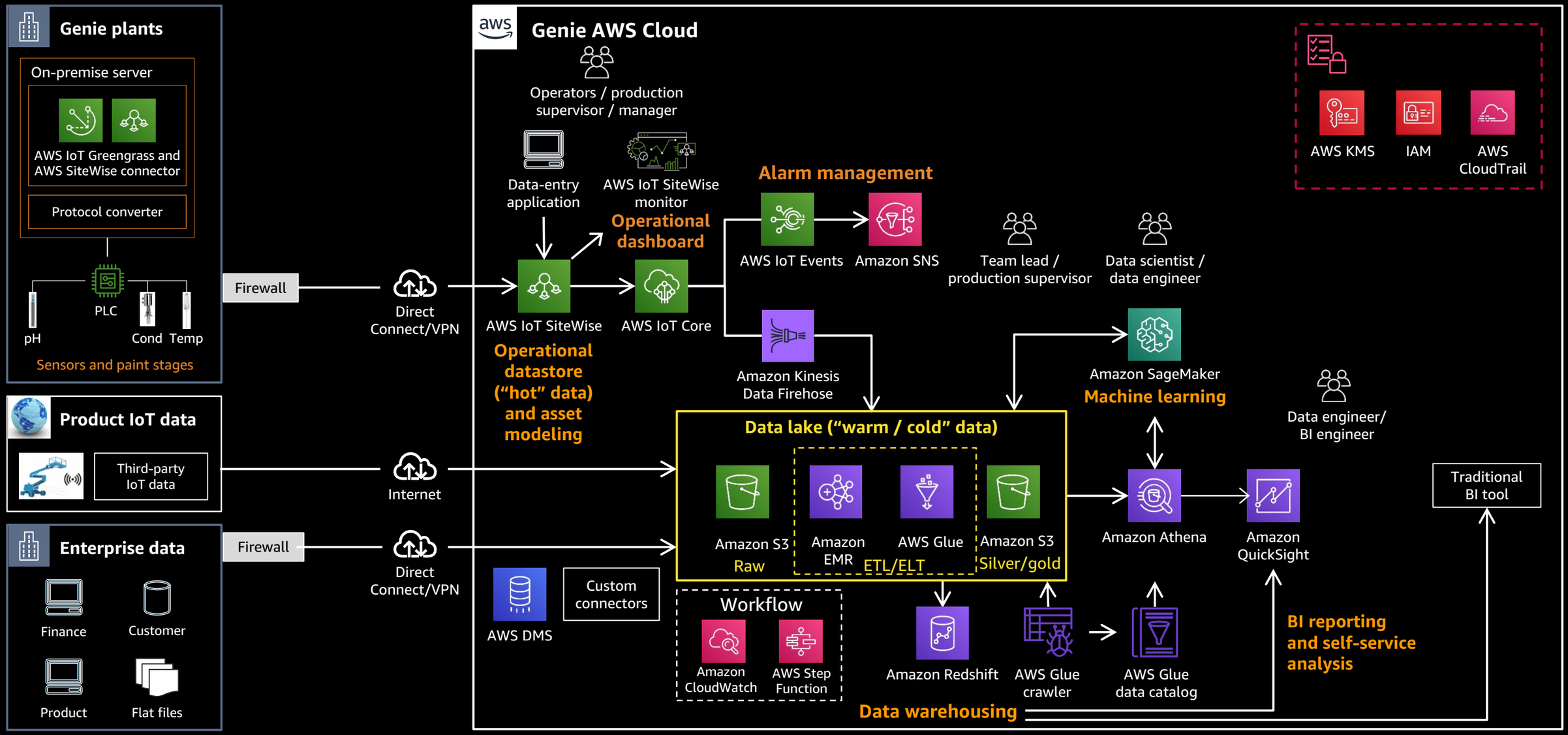
- Build secure and durable factory-to-cloud data flow
- Migrate from analog only to digital instrumentation plus analog calibration
- Data collection from every few hours to seconds
- Visual management span from one shift to days and months



Aligning use cases to drive value throughout the digital thread



Building for the digital thread

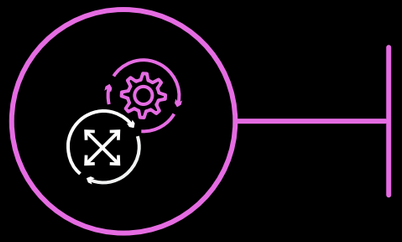


Lessons learned

- Collaboration between teams is essential
- Security and speed do not have to be opposing forces
- Immerse the full team into technology early
- Liberating untapped data: first step in transformation
- Access to low- or no-code UI would further decrease time to value



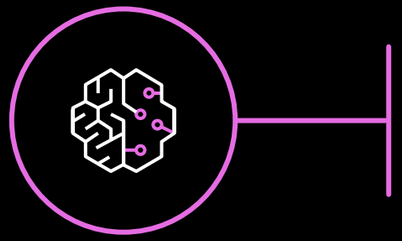
What’s next?



Business KPIs and business outcomes drive further development



Build digital DNA on strong OT background and expand footprint further in plants and throughout enterprise system landscape



Along the way: fail, learn, improve

Thank you!



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