EUVIC_   Google Cloud

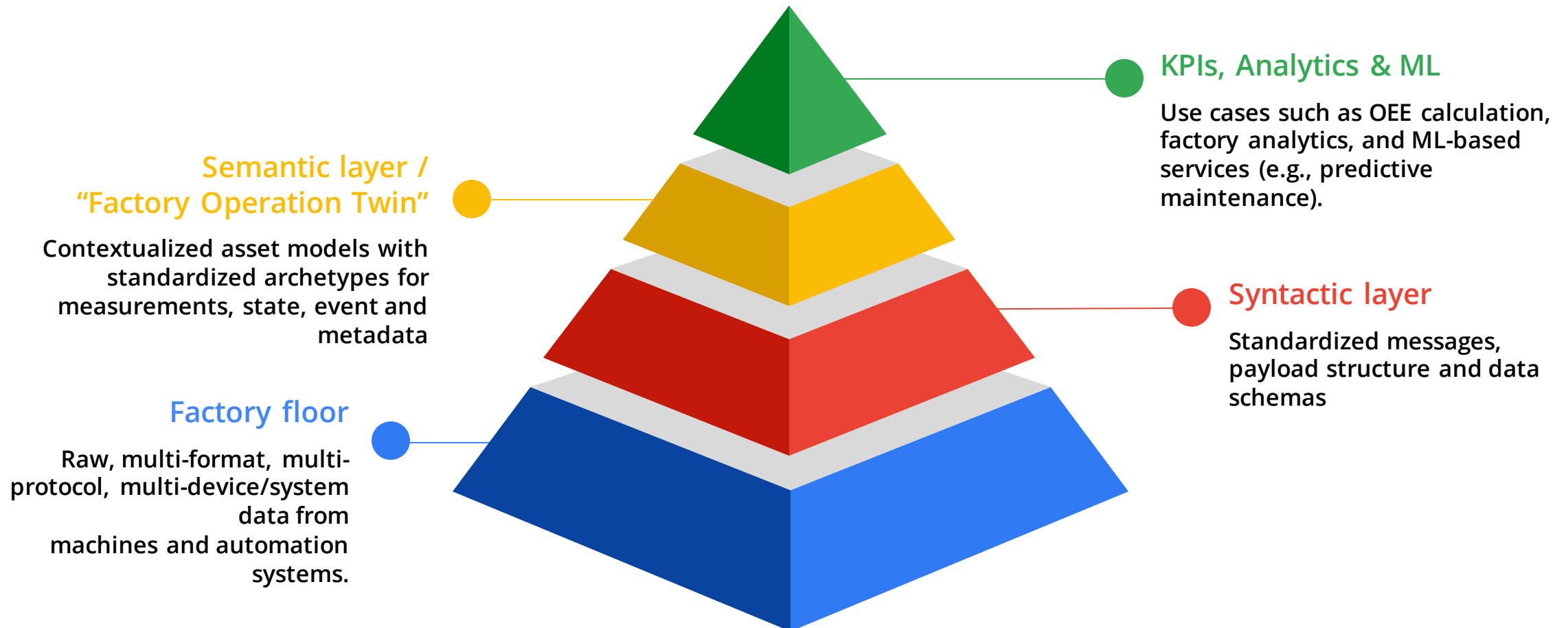## Clear and Consistent Way Towards Industry 4.0 with Euvic and Google Production Optimization Solutions

XXI Polish Control Conference

GCP approach to data modeling: end-to-end from factory floor to use case

KPIs, Analytics & ML

Use cases such as OEE calculation, factory analytics, and ML-based services (e.g., predictive maintenance).

Semantic layer / "Factory Operation Twin"

Contextualized asset models with standardized archetypes for measurements, state, event and metadata

Syntactic layer

Standardized messages, payload structure and data schemas

Factory floor

Raw, multi-format, multi-protocol, multi-device/system data from machines and automation systems.

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As the world emerges from the pandemic, there are major trends refocusing the transformation of the manufacturing industry

Customer digital expectations

IoT everywhere

Margin pressures and need for new revenue

Supply chain disruption

Worker shortages and the digital talent gap

Climate crisis and sustainability

EUVIC_   Google Cloud

A manufacturing cloud strategy can build the resiliency needed to adapt to these trends and accelerate the transformation

Bridge the gap between IT and OT to create a digital thread of multi-source data with context and relationships for advanced decision making

Capture incremental value via enterprise platforms to deliver services, unlock innovation faster, and open new revenue opportunities while getting closer to end-customers
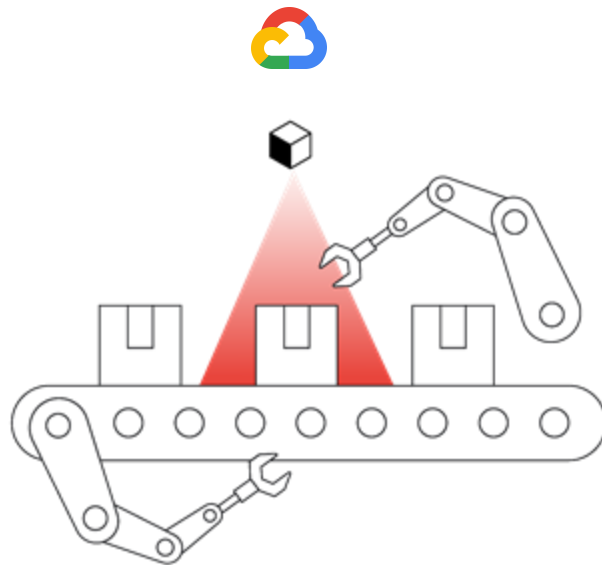
Adopt a digitally enabled anywhere-workforce model and close the talent gap

Build a composable distributed technology infrastructure from edge to cloud

Maintain highest levels of cybersecurity with advanced tools and dedicated experts

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Google Cloud helps manufacturers' accelerate their digital transformation by bridging data silos, and turn every engineer into a data scientist with our easy-to-use AI tools and leading industry data platform.

EUVIC_   Google Cloud

Google Cloud is targeting use cases across four key transformational areas in manufacturing

Getting closer to the end customer

Offer new digital services to attract and maintain customers, capture better margins. Build closer relationships with customers across all touchpoints

Turn every product into a smart product

Embed intelligence across your product portfolio by leveraging IoT and Cloud infrastructure. Open up new revenue models (i.e. servitization, consumables) and increase your products features with AI

Optimize supply chain and operations

Build transparency and resiliency across your supply chain and operations to adapt better to disruptions. Tap into your enterprise data to increase efficiencies with analytics and AI

Build sustainable products on the greenest infrastructure

Partner with Google Cloud to achieve your ESG objectives and become a sustainable organization

EUVIC_   Google Cloud

Google Cloud is targeting use cases across four key transformational areas in manufacturing

Getting closer to the end customer

Customer data platform

B2B & B2C commerce for manufacturers

Cloud 3D streaming

Product discovery and search

AI for customer interactions

Turn every product into a smart product

HPC design and simulation

Smart services

Predictive maintenance and fleet management

Collaboration for product development

Optimize supply chain and operations

Supply chain transparency

Inventory optimization and demand forecasting

Quality control with AI

Plan analytics and OEE

Distributed cloud

ERP cloud analytics and AI

Build sustainable products on the greenest infrastructure

Carbon offset VMs

Cloud infra. carbon reporting

Partners sustainability offerings on GCP

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Solving for delightful customer experiences with; data platforms, ecommerce, VR/AR, conversational AI and more!
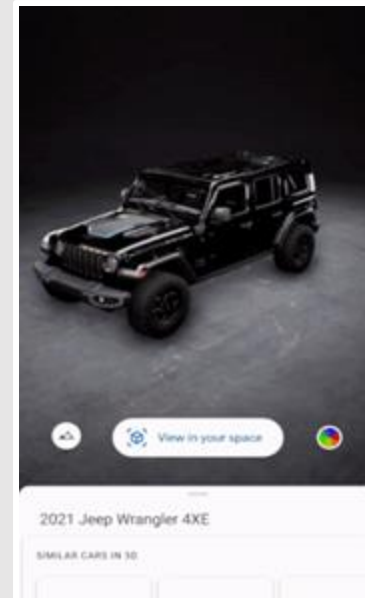
Get closer to the end customer

Customer Data Platform

Break down data silos and create a holistic view of the customer to drive marketing and customer service success with a customer data platform powered by Google. Enhance marketing activation and ROI with personalized communications driven by smart segmentation and demand-sensing capabilities.

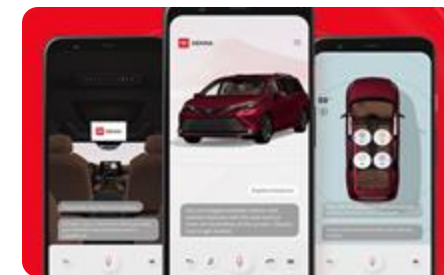## Streaming 3D and augmented reality (AR)

Delight your customers with rich, immersive 3D and AR experiences built into your website, car configurator, and virtual showrooms.

From print to voice and beyond: How Toyota is transforming the car manual

Toyota set out to elevate and personalize the incumbent car manual by creating a voice activated digital owner's manual experience, all powered by Google Cloud. Accessible through the existing Toyota app, this companion provides real-time assistance, any time of the day. Drivers can ask questions and the companion will efficiently provide helpful answers in convenient ways, from voice to 3D walkthroughs and explorable environments.

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Solving for smart products with; over-the-air updates, AI at edge, fleet management and more!
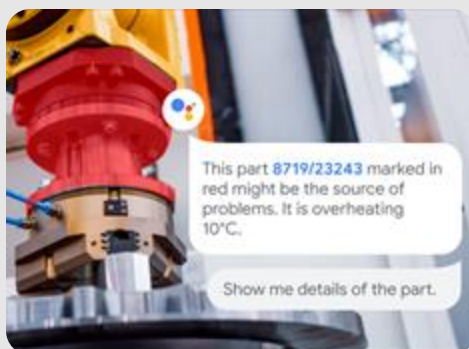
Turn every product into a smart product

Google Cloud Intelligent Products

Connected, personalized digital experiences with AI powered features, capabilities and commerce.

GE Appliances and Google Cloud building the next-gen Smart Home Appliances

GE APPLIANCES

App, Device and AI Feature Management

Create new or update capabilities with AI or ML to enhance the ownership experience and enable monetization.

This part **8719/23243** marked in red might be the source of problems. It is overheating 10°C.

Show me details of the part.

Customer Product Experience and Intelligence

Create customer-centric omnichannel and personalized product experiences backed with advanced analytics.

As GEA continues to reinvent itself and the appliance business, it turned to Google Cloud for its world-class expertise in data, analytics, artificial intelligence (AI), and machine learning (ML) to accelerate this evolution— GEA is leveraging these capabilities into its entire appliance development process, from ideation to the production line via the Google Cloud Intelligent Products solution.

EUVIC_   Google Cloud

Solving for supply chain and operations optimization with; digital twins, plant analytics, quality AI and more!

Optimize supply chain and operations

Supply Chain Twin & Pulse

Build a digital representations of physical supply chains by organizing and orchestrating critical data. Empower business users to manage end to end supply chains in real time via visibility, alerting, collaboration and using AI.

Manufacturing Data Engine

Process, contextualize and store factory data. It provides a configurable & customizable blueprint for the ingestion, transformation, contextualization, storage & API-based access to factory data. It includes extensive integration code for key Google Cloud products.

Renault and Google Cloud; setting the standard for Intelligent Manufacturing

Renault Group

By aggregating inventory data from our suppliers and leveraging Google Cloud's strength in organizing and orchestrating data, with solutions like the Supply Chain Twin, we expect to achieve a holistic view. We aim to work with Google tools to manage both stock, improve forecasting, and eventually optimize our fulfillment." - Jean-François Salles, Supply Chain Global Vice President, Renault Group

EUVIC_   Google Cloud

Solving for a sustainable future with; green infrastructure, data analytics, robust Partner ecosystem, and more!

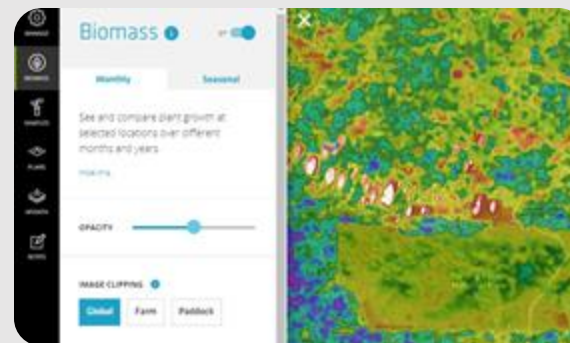Build sustainable products on the greenest infrastructure

Digital Sustainability

Reduce the immediate impact of IT operations and lower associated emissions, by migrating your infrastructure to Google Cloud's green data centers. Monitor your cloud carbon footprint with our tools to report and act on reducing emissions.

Google Earth Engine + TraceMark for sustainable sourcing

Collect supplier list across the world with TraceMark. Develop a supplier footprint using Google Earth Engine data in BigQuery to analyze your supplier behaviour visualized overtime. Automate data-driven sourcing scorecard and report across the organization.

Unilever and Google Cloud teamed up to reimagine the future of sustainable sourcing

Using cloud computing, satellite imager and AI, the Unilever and Google Cloud are building a more holistic view of the forests, water cycles, and biodiversity that intersect Unilever's supply chain. Google Cloud's planetary-scale geospatial platform combines accurate satellite imagery, with the ability to store and make sense of large amounts of complex data.
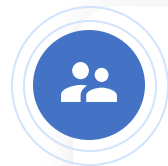
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The leading Manufacturers are working with Google Cloud to solve the industry most pressing challenges

Selection

Google Cloud has a robust and growing ecosystem of expert Partners in Manufacturing and Supply Chain

Selection

Industry partners

SIEMENS · C3.ai · LITMUS · OSIsoft.

Applied Intuition · App Orchard · Pluto7 · cadence

GEOTAB · Hitachi Energy · Honeywell · Landis+Gyr

Level10 Energy · MITSUBISHI ELECTRIC Changes for the Better · Palantir · proceedix

SIBROS · splunk> · synopsys · UP SKILL

Service partners

EUVIC · aliz · BrainPad · Atos

Capgemini · accenture · CLOUDWÜRDIG · Cognizant

CORE CONCEPT TECHNOLOGY INC · Deloitte · <epam> · ERGOM

GFT · HCL · Hitachi Consulting · KYOCERA

ML6 · NETCONOMY · NSW · FA.COM

OKI · quantiphi · SCSK · softserve

SOTEC · TATA CONSULTANCY SERVICES · Unilabs · zoi

EUVIC_ · Google Cloud

Why Google Cloud

Helping you solve real business problems across the manufacturing value chain

| Industry-leading technology | ❯ | Google consistently **ranks among top cloud providers** for its technologies |

| Portfolio of manufacturing solutions | ❯ | Develop **new industry 4.0 solutions**, underpinned by our proven data cloud for manufacturing |

| Commitment to sustainability | ❯ | **100% renewable energy**, zero net carbon emissions |

| Partnership with industry leading providers | ❯ | Augment existing solutions and de-risk innovation by **working side-by-side with our expert manufacturing partners** |

| Data governance and security | ❯ | Ensure full control, privacy, **protection and sovereignty of your data** |

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Getting started with Google Cloud

1

Reach out to your Google Cloud representative

Get your questions answered by our Manufacturing SMEs and plan for the next steps that work for your organization

2

Host joint Exec briefing

Let's review your use cases together and explore how our solutions can help you solve your biggest challenges
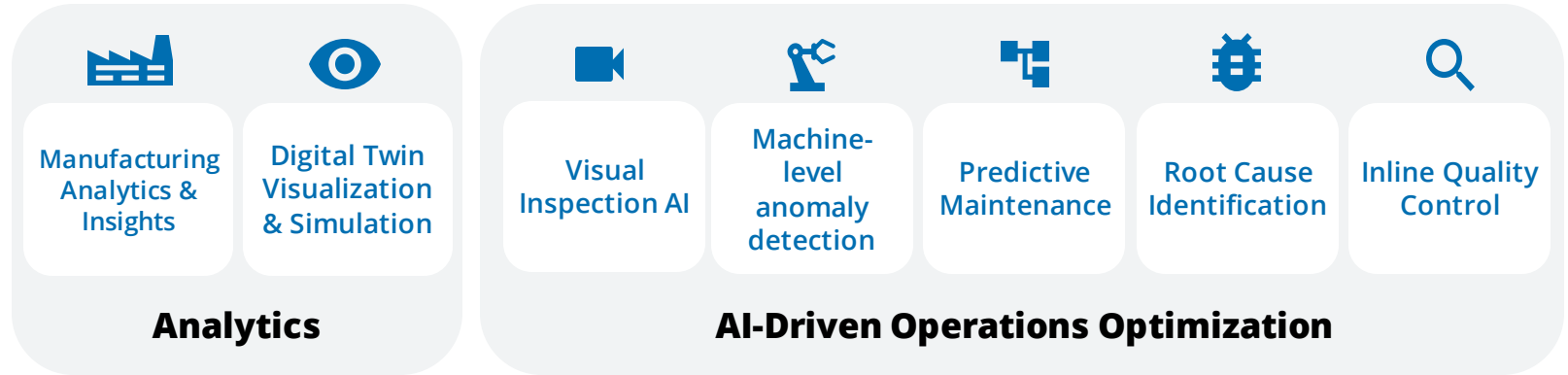
3

Launch a Trial

Conduct a pilot to assess solution feasibility and performance in a real production environment
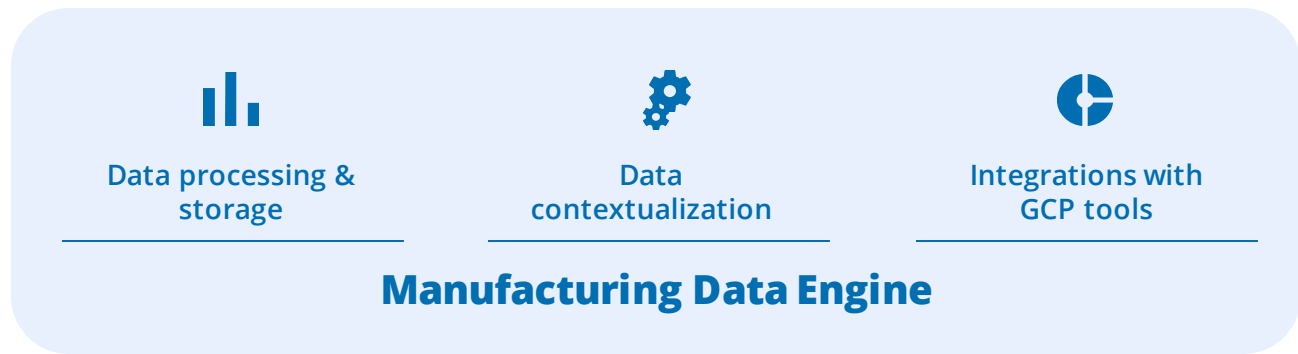
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Google Manufacturing solutions overview

NDA

Analytics
- Manufacturing Analytics & Insights
- Digital Twin Visualization & Simulation

AI-Driven Operations Optimization
- Visual Inspection AI
- Machine-level anomaly detection
- Predictive Maintenance
- Root Cause Identification
- Inline Quality Control

Data Engine API

Manufacturing Connect

Private & secure connectivity

Machine to GCP connectivity

Manufacturing Data Engine
- Data processing & storage
- Data contextualization
- Integrations with GCP tools

Google Cloud products and services

Google Cloud and Partners products and services

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Thank you
Feel free to contact us!

Zbigniew Gała

Chief System Architect

Euvic Solutions S.A.

Krzysztof Sprawnik

Google Cloud Customer Engineer

Google Polska