

Gemeinsam Mehrwert generieren Wie IoT und Machine Learning die Fertigungsindustrie verändern

Bernd Schneider
Industry Technology Lead Manufacturing
Google Cloud Switzerland

September 2021



Alphabet

 Google Ventures Venture & capital funding	 Calico Longevity Research	 Google X Innovation Lab & Research						
 Verily Improving Quality of Life	 DeepMind Artificial Intelligence & Machine Learning	 SideWalk Labs Solving Big Urban Problems				 Search Advertising SEM	 Google Cloud Cloud Services, G Suite	 Maps Mapping, Location Services & Logistics
 Waymo Self Driving Vehicles	 Google Fiber High Speed Internet Services	 Jigsaw Online Global Security Solutions				 Google Marketing Platform Unified Ad Technology Stack	 Google Analytics 360 Suite Data Analytics Suite of Tools	 Android Mobile Operating System
 intrinsic Industrial Robotics						 Hardware Pixel, Chromecast, Google Home, Daydream View	 YouTube Internet Video Service	 Nest Connected Home Devices

Google in Switzerland

01

>4000 employees
& 85 nationalities

03

Google AI & ML Center

02

European Engineering Hub
(e.g. YouTube, Assistant)

04

Since 2004 in Switzerland



Google Cloud's Mission

Accelerate every organization's ability to **digitally transform** and reimagine their business through **data-powered innovation**

Every industry is going digital.

By 2022,

70% of enterprises will integrate cloud management across private and public clouds*

And by 2025...

At least 90% of new enterprise apps will embed AI*

By 2024,

Over 50% of all IT spending will go toward digital transformation and innovation**



Source: *IDC, [IDC FutureScape: Worldwide IT Industry 2020 Predictions, October 2019](#) **IDC, [IDC FutureScape Outlines the Impact 'Digital Supremacy' Will Have on Enterprise Transformation and the IT Industry, October 2019](#)

The manufacturing industry faces continued pressures amidst a 'new normal' market



Cost pressures and profitability

The manufacturing industry saw a **revenue decline of 23% in 2020** alone¹



Environmental sustainability

Manufacturers contribute to 25% of global CO2, but are driving **sustainable operations through technology**²



Supply chain volatility

COVID-19 is the largest disruptor of manufacturing supply chains, affecting **60% of companies**³



Workforce transition

25% of the manufacturing workforce is **55 years of age or older**⁴



Culture of innovation and collaboration

Digital collaboration can unlock more than **\$100 billion in value** for manufacturers⁵

Industry 4.0 is the current transformation of traditional manufacturing and industrial practices with the latest smart technology



68% of industrial companies see Industry 4.0 as a top strategic priority, with 70% already piloting solutions¹



Industry 4.0 adoption has resulted in benefits like 80% labor cost reduction and **30-40% lower capex**¹



Manufacturers face **demand and supply chain volatility**, and are looking for solutions to improve operations²

AI will drive the next evolution in Manufacturing - Standardised machine readable information models will hasten this evolution.

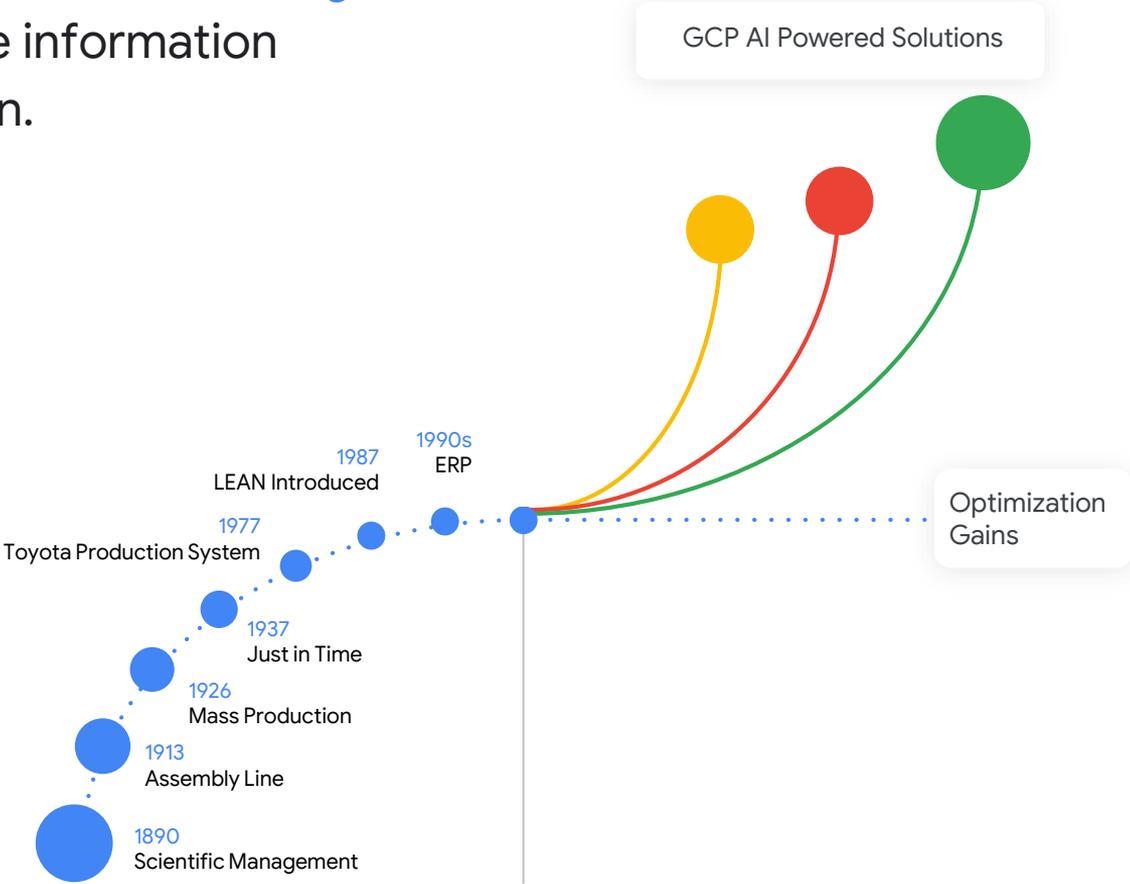
Connect your people, systems, and data to break down silos

Drive real business outcomes by leveraging advanced analytics and intelligence

Power a new level of autonomy and efficiency with AI

Milestones in optimization

● ROI ● ● ●



Unifying data is critical to manufacturing transformation ... but difficult due to a complex technology landscape



Legacy and distributed infrastructure with high maintenance costs



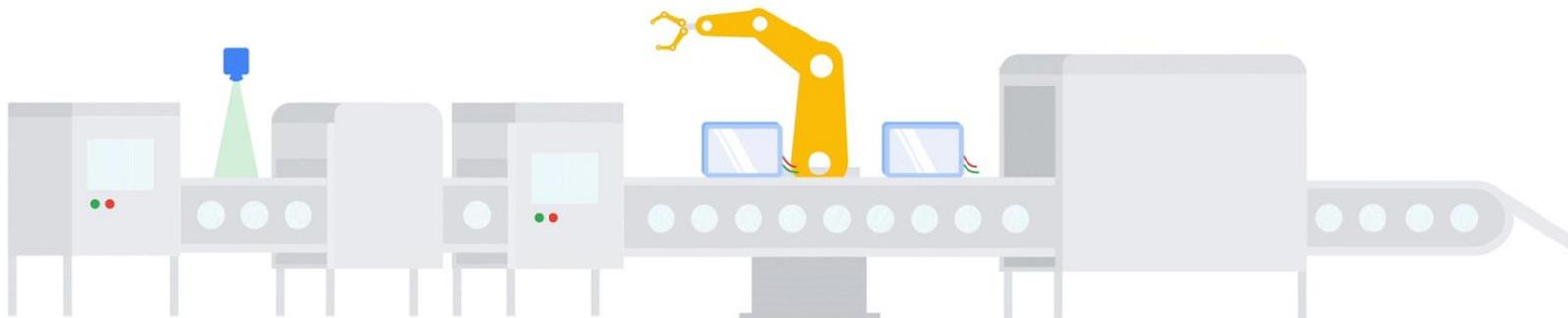
Disparate data silos and systems across the organization with varying levels of digitization



Inconsistent, unstructured data formats make data analysis complex and time consuming

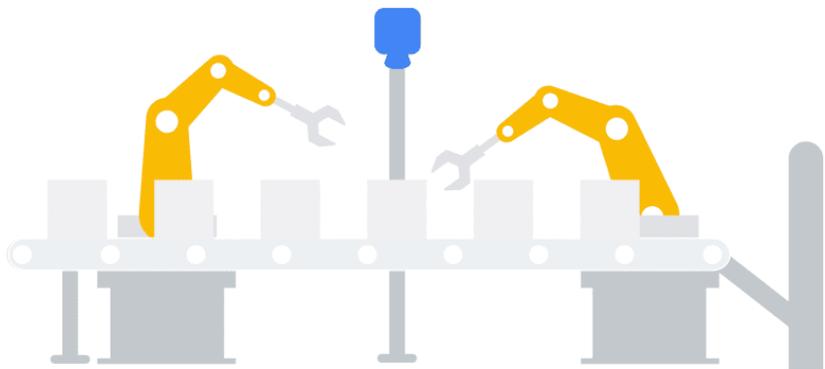
Difficult to gain real-time visibility into operations at a global scale

Google Cloud IoT connectivity, analytics and AI: the end-to-end solution for ingesting, unifying, and analyzing factory data



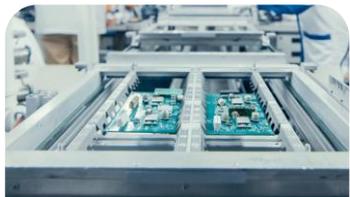
Google Cloud IoT, analytics and AI solutions helps manufactures gain and aggregate data from your machines, assembly lines and factories to fuel Industry 4.0 use cases

Google Cloud Visual Inspection AI for discrete manufacturing quality control processes



Google has partnered with industry leaders to build a **best-in-class** Vision AI product for manufacturing quality control

Google Cloud Visual Inspection AI can be applied across a wide range of discrete manufacturing use cases



Electronics

Cosmetic defect detection

Assembly inspection



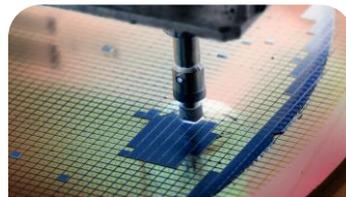
Automotive

Surface quality control

Presence check

Welding defects

Cable tree path



Semiconductor

Optical wafer defect detection

Microscope image analysis



CPG

Packaging material quality control

Labelling control

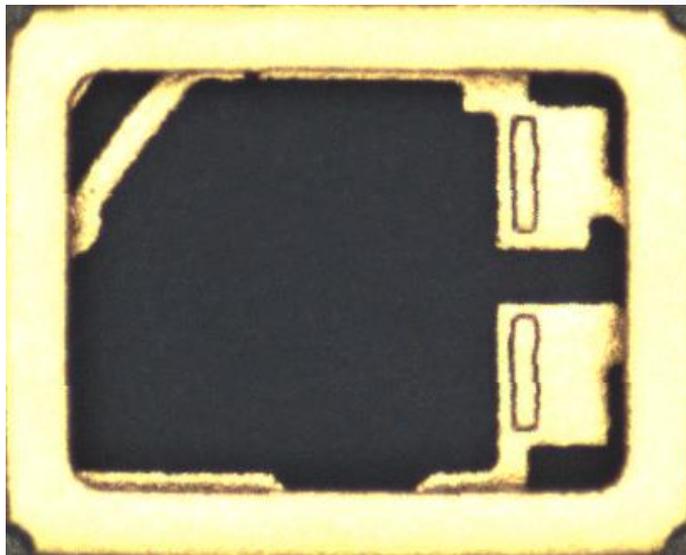


Kyocera automates complex defect detection on electronic equipment

Achieved **98.5%** defect detection accuracy at an average prediction latency of **8.98 ms**

Accelerated and simplified the manual product inspection process

Overcame detection challenges including multiple partially visible objects, constantly moving targets, and miniscule difficult-to-detect blemishes



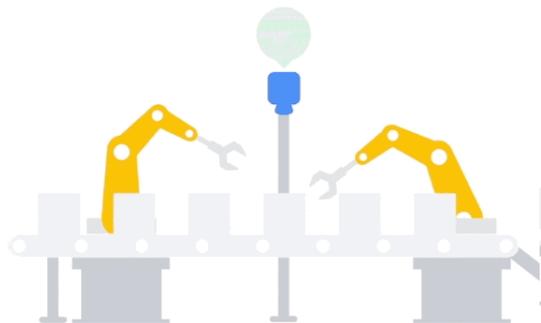
Google Cloud

Webinar: Visual Inspection AI

Die neue Qualitäts-Management-Lösung für die Fertigungsindustrie

02.09.2021
10-11 Uhr

Jetzt anmelden



 **FREUDENBERG**
INNOVATING TOGETHER

T·Systems

Watch the on-demand sessions of the **Visual Inspection AI webinar** with Google Cloud, T-Systems & Freudenberg Performance Materials:

