



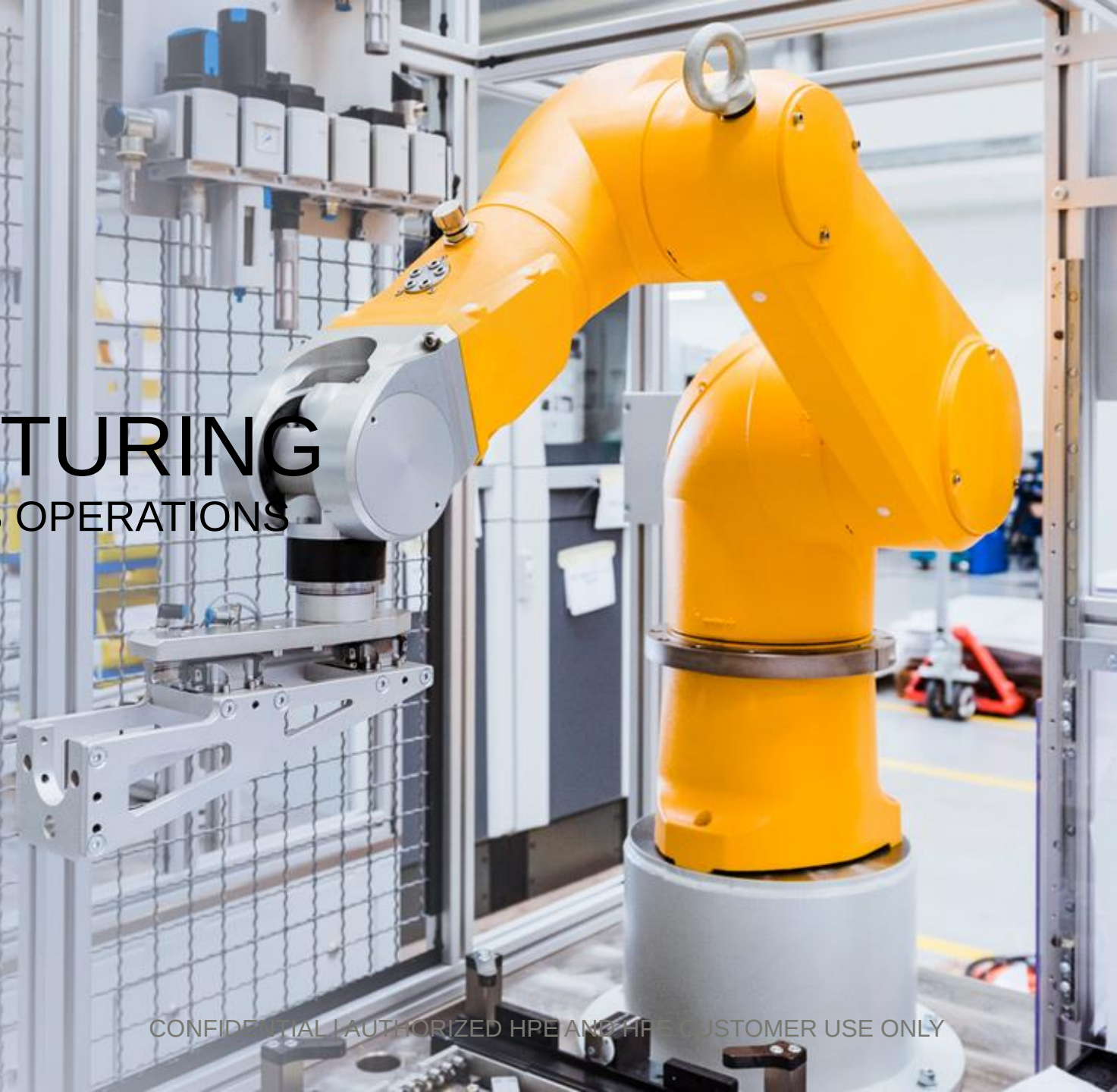
**Hewlett Packard
Enterprise**

HPE IN MANUFACTURING

THE CATALYST FOR AUTONOMOUS OPERATIONS
FROM EDGE TO CLOUD



Vu Huy Tung



CONFIDENTIAL | AUTHORIZED HPE AND HPE CUSTOMER USE ONLY

55

devices will be
connected
worldwide by
2022.¹

B

EDGE DATA DRIVES THE NEXT LEVEL OF TRANSFORMATION

50

%

of data will be created
and processed at the
edge outside the
traditional data center
or cloud.²

¹ IDC
² Gartner

KEY CHALLENGES IN MANUFACTURING



Supply chain complexity and disruption

Need for resiliency and forecasting accuracy



Increasing / shifting customer expectations

New features & functionality
Lot size of one



Intense competition

From established competitors and unexpected new sources



Societal and regulatory mandates

Industry and environmental compliance
Ethical sourcing and manufacturing

DIGITAL TRANSFORMATION IS NOW AN IMPERATIVE

Faster
time-to-market

Product
innovation

Smarter, more
connected
products

Real-time
optimization and
recommendations

Remote
product
support

More
autonomous
operations

Resilient
supply chains

Flexible,
scalable
production

Worker health
& safety

Agility is key

OPTIMIZE OPERATIONS WITH REAL TIME ANALYTICS AT THE EDGE

Condition Monitoring



Gain visibility

Monitor asset performance to prevent breakdowns before they occur

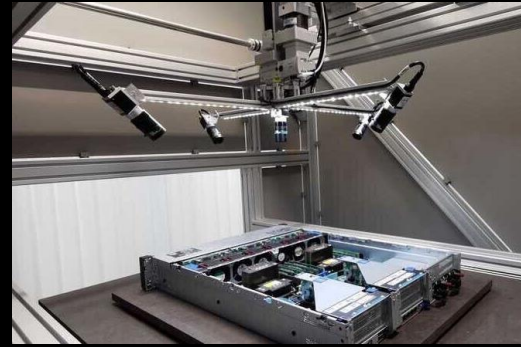
Predictive Maintenance



Reduce unplanned downtime

Predict asset performance and optimal maintenance intervals

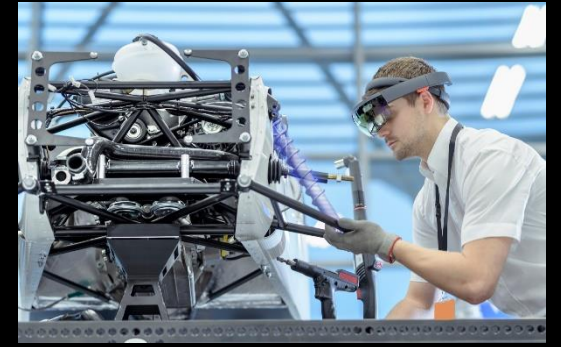
Video Analytics Quality Assurance



Reduce product defects

Improve inspection speed and accuracy with AI-based automated inspection

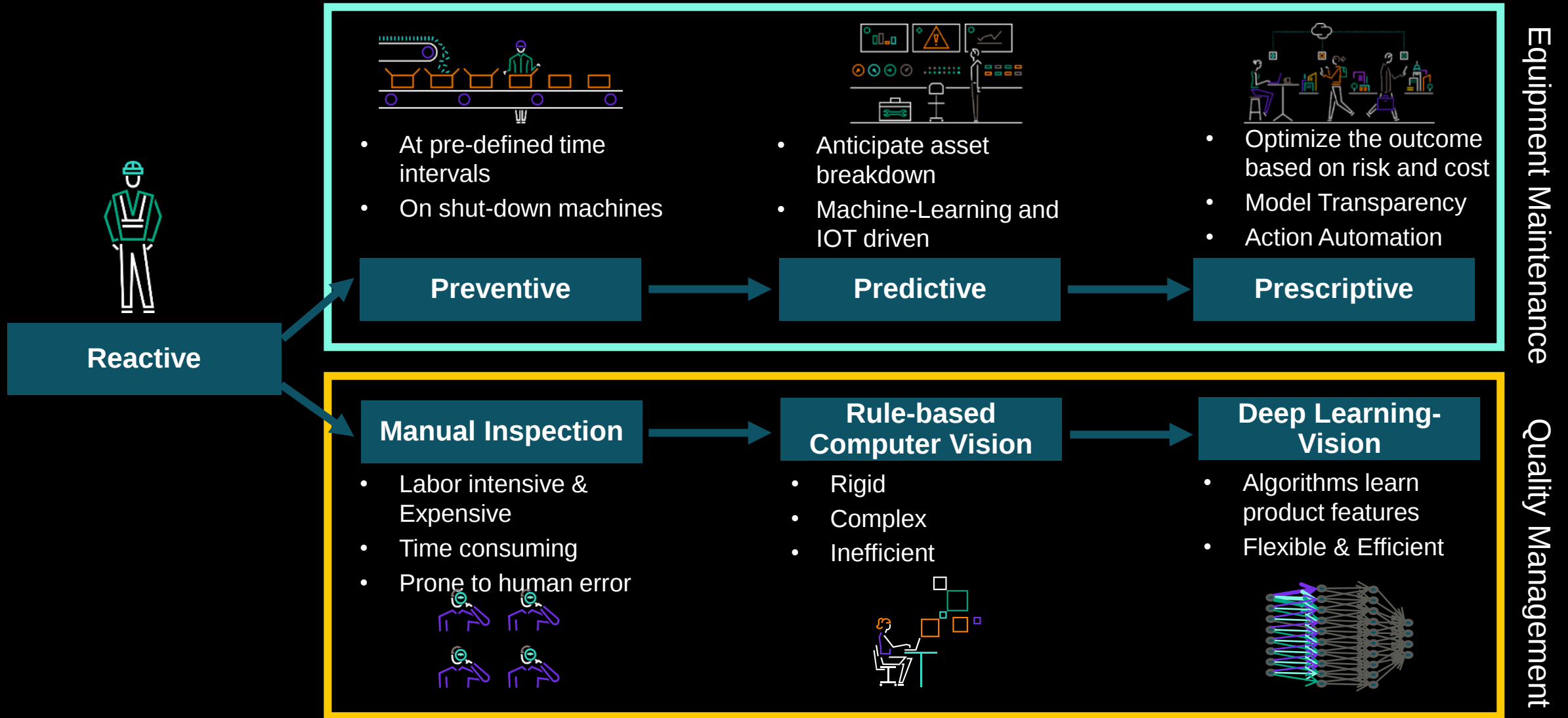
Connected Worker



Improve performance and productivity

Guided assembly and “see what I see” AR-based technologies to connect workers with information and experts

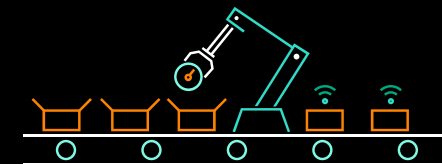
TRADITIONAL MAINTENANCE AND QUALITY APPROACHES FALL SHORT



A DAY AT A FACTORY FLOOR

IoT and AI meet to drive increased availability, quality, and performance

IoT powered Machines, Robots



1

Real-time data from equipment sensors (temperature, speed, vibration, images, videos)

2

Condition based monitoring on sensors trigger alarm
As threshold values reached

3

Analytical view of historical sensor data to explore data

4

Quality Control

Image analysis using AI/ML and deep learning to detect product defects or machine issues

Predictive Analysis

Plant view provides alerts on predicted issues on Machines or products

5

Prescriptive Analysis

Maintenance recommendations based on prediction interpretation, installation criticality, cost impact

6

Manual or automated maintenance actions

7

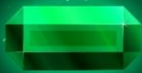


Action is manually or automatically executed to schedule maintenance,, connect to equipment

RUGGEDIZED INTELLIGENCE: ACQUIRE + ANALYZE + ACT

vmware®

HPE Ezmeral



8 VMs
80 Containers



EL 300

32 VMs
320 Containers



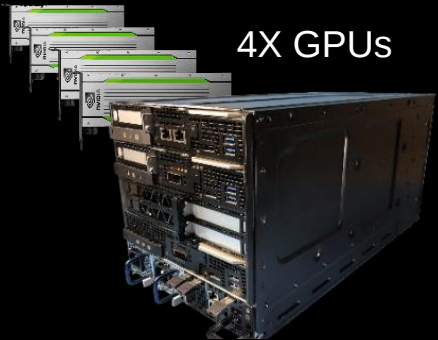
EL 1000

128 VMs
1,280 Containers



EL 4000

288 VMs
2,880 Containers



EL 8000

2-4 node HA cluster

HPE GreenLake
Edge



PREDICTING FUTURE ASSET REQUIREMENTS

Chemical manufacturer **Texmark** deployed IIoT-based condition monitoring and predictive maintenance solutions to better track asset utilization and anticipate maintenance requirements to prevent equipment failures, increase productivity and lower costs.

Reduced unplanned downtime by anticipating equipment failures and scheduling repairs during planned outages	Reduced worker safety incidents by automating data collection	50% reduction in planned maintenance costs
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FOXCONN VALUE FROM MANUFACTURING DATA

Manufacturer of HPE servers **Foxconn** increases automation, speed and predictability of manufacturing processes to improve product quality and the customer experience.

>1,000
server configurations

25%
reduction in defects,
improving customer
satisfaction and overall
quality

Lot size of 1
new configuration
every 3rd or 4th server
on the line
3 weeks to 2 days
Reduction in deep
learning model training
time

THANK YOU



For more information, visit
hpe.com/info/manufacturing

