



SIEMENS
Ingenuity for life

Future of Automation

Veranstaltung „Lernreise“, Bad Neustadt
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The world is changing!

Reduced
Time-to-
Market

Enhanced
flexibility

Optimize
maintenance

Documentation
of quality

New
business
models

Increase
efficiency

Improve
Quality

Security

Optimized
failure
search



Intuitive
User
Interface

Data
transformation
into valuable
insights

What is next in automation?



Edge Computing

The need to process data next to the machine
has become an obligation



Cloud



Control level

Siemens closes the gap!



Cloud



Industrial Edge



Control level

Siemens Industrial Edge brings IT mechanisms into the OT world



Edge Management System

Central infrastructure to manage Edge devices



Edge Apps

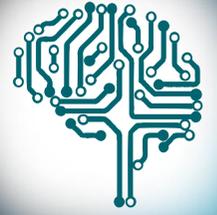
Applications for intelligent data use



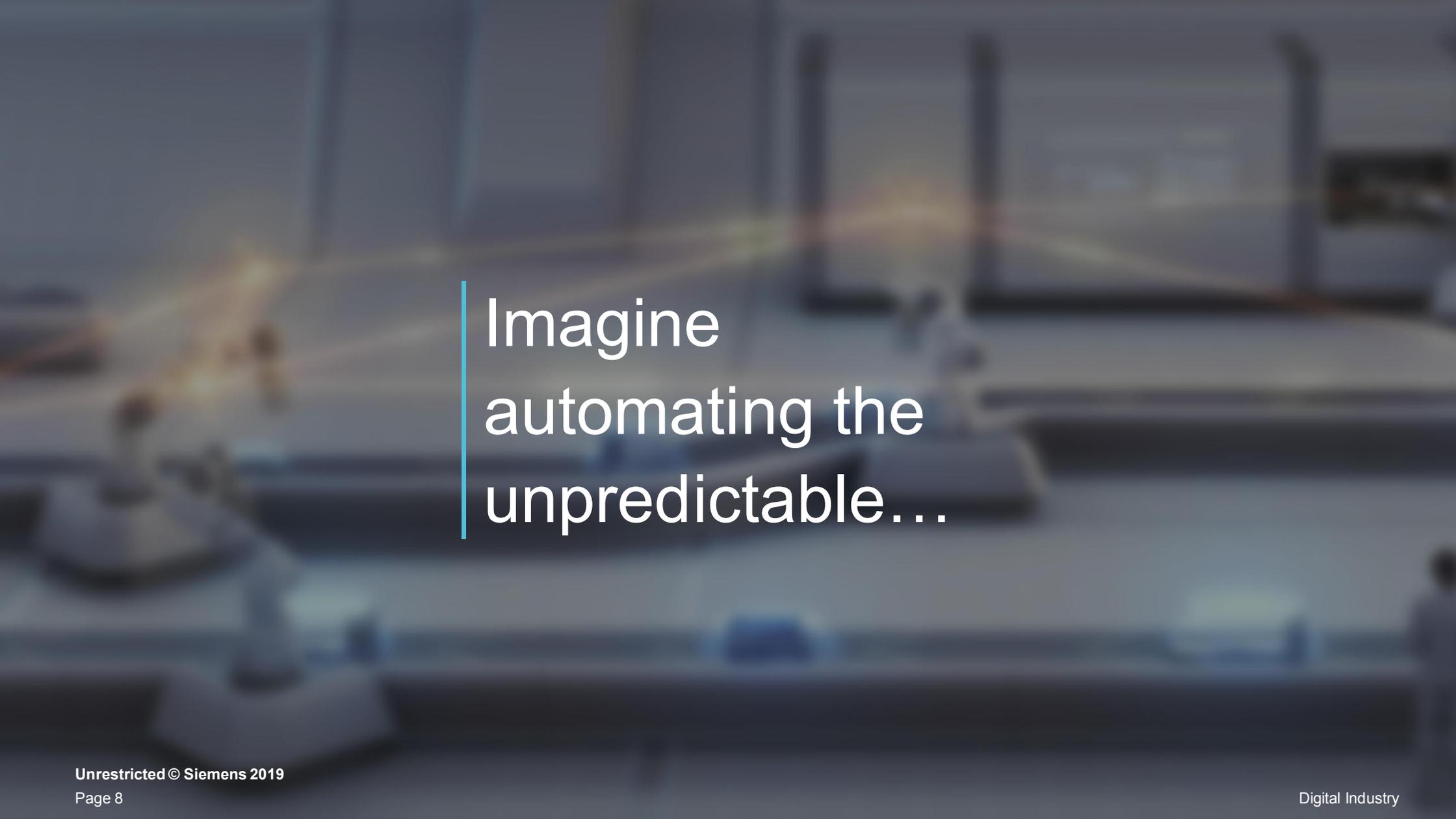
Edge Devices

Secure, future-proof basis for running Industrial Edge applications

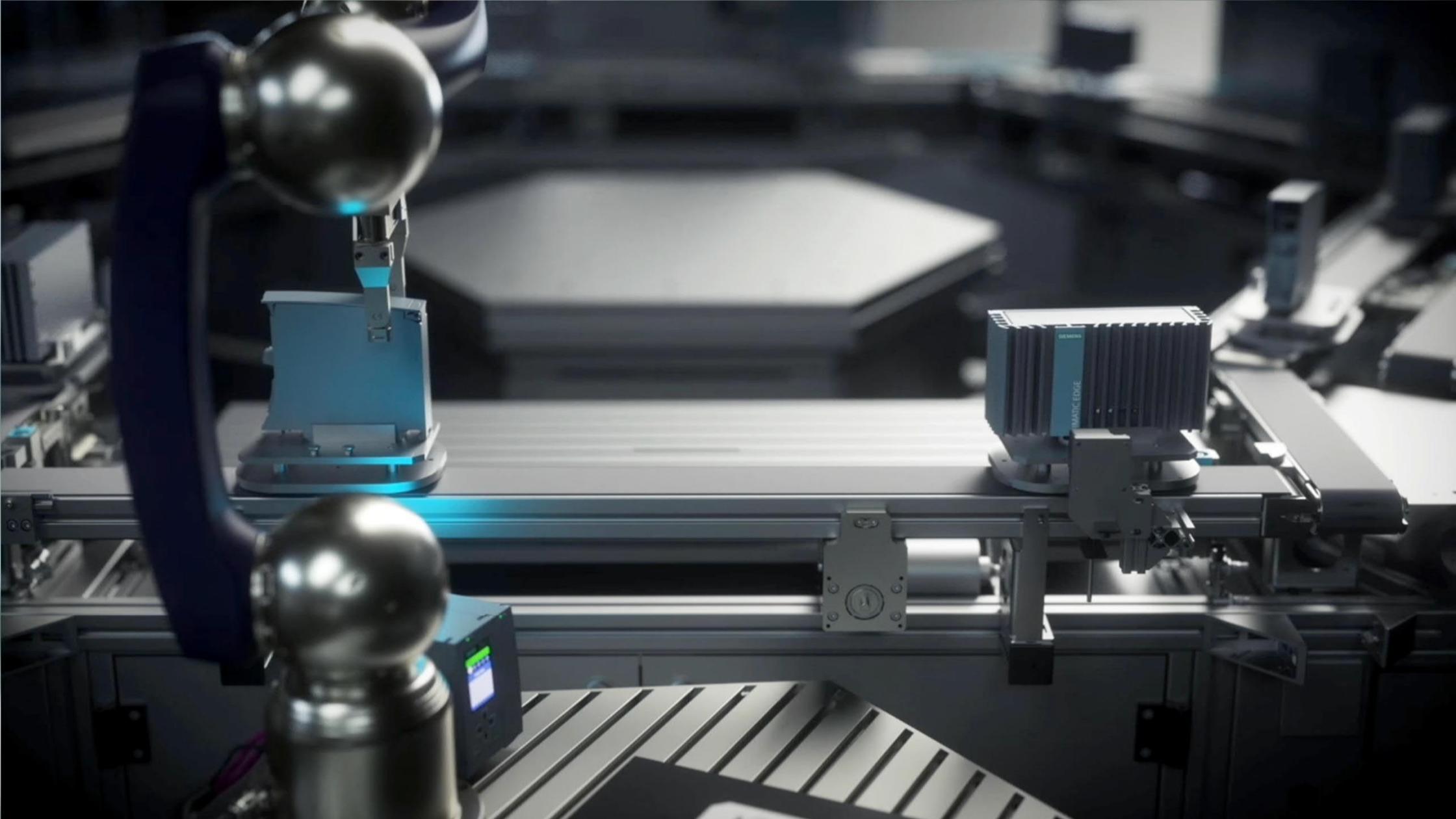




Artificial Intelligence

A blurred industrial background with a vertical blue line on the left side. The text is centered in the middle of the image.

Imagine
automating the
unpredictable...



Siemens is the first company to enable Artificial Intelligence on the control level.

NPU module



Powerful AI chip

Sensor connection

TIA Portal AI toolkit

Artificial Intelligence

Today

We are telling the robots how to perform.

Tomorrow

We will tell the robots what to do, and they will decide themselves how they do it.





X-RAY ON

X-ray-based PCB quality assurance

Siemens Electronics Factory
Amberg, Germany

The Challenge

Production output of SMT line limited
by time consuming X-ray Quality tests

Every further X-ray machine requires
additional invest of €500,000

Non Production Critical Level

AI

Training of Algorithm



Continuous data storage

App Deployment/Update

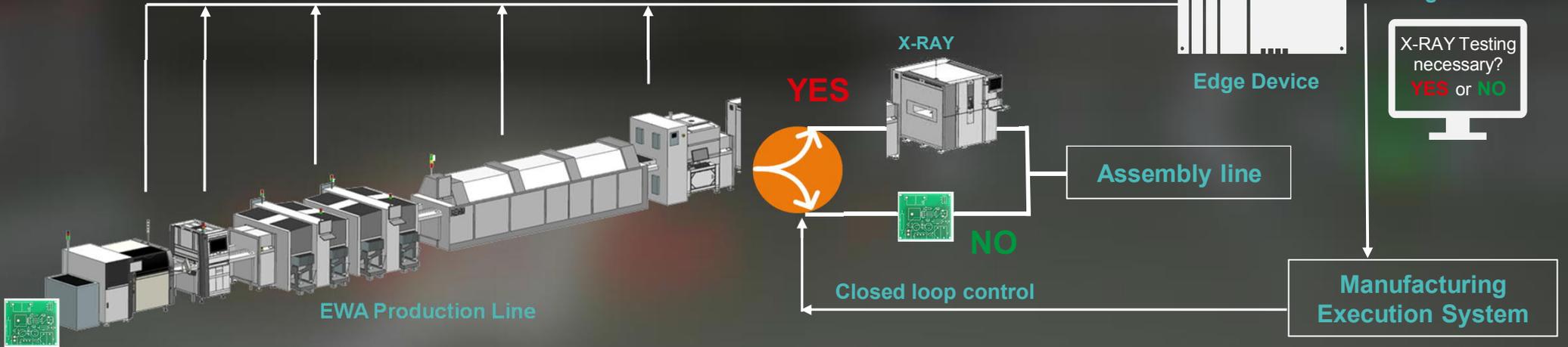


Proxy

Production Critical Level

Peak volume of 10 MB/s

Captured Data Real time capturing of >40,000 production parameters



X-RAY

YES

NO

Closed loop control

Assembly line

Edge Device

AI

PCB Quality Prediction Algorithm

X-RAY Testing necessary?
YES or NO

Manufacturing Execution System

EWA Production Line

Benefits of Edge Computing and Artificial Intelligence



Minimization of necessary X-ray tests by up to

30%

Quality rate of

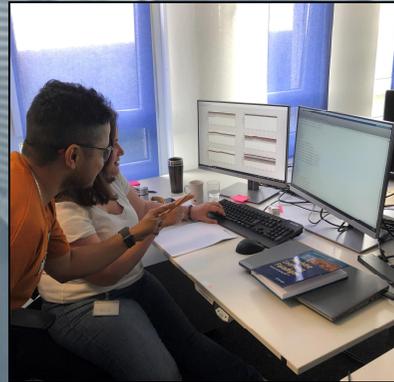
100%

Reduced capital invest for further X-ray machines of

€500,000

How I adapted my organization to the needs of digitalization

Diversity, complementarity, and peer recruitment are essential to build a high-performance team



Building internal start-ups with great independence and empowerment for disruption





- **Apply Edge technology to drive IT / OT Convergence and new business models**
- **Leverage AI to increase flexibility and increase degree of automation**
- **Discover new organizational setups to support your digitalization journey**