## 5 Trends for Al Adoption in Manufacturing

Manufacturers are utilizing AI to unlock greater efficiencies within their production environments, according to a survey of manufacturing leaders conducted by Edge Impulse and Manufacturing Dive's studioID.



# is the foundation for Al

**Production monitoring** 

that they are currently monitoring production output, product quality and consistency, and equipment. This sets the stage for AI integration.

9 in 10 manufacturers report



Companies are using edge AI to optimize processes, monitor equipment, inspect

"

products, and predict maintenance issues before they occur, ensuring more consistent production and a stronger bottom line. **DANIEL SITUNAYAKE** Director of ML, Edge Impulse

**Quality** is the name

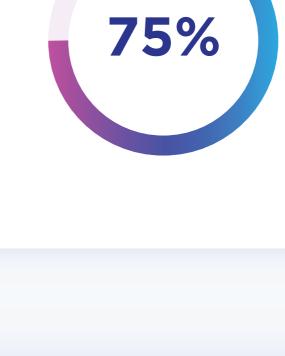
#### Improving the bottom line is a clear priority, with over 75% of

of the game

process. This is closely followed by production quality. "

respondents looking to AI to

strengthen their manufacturing



the repeatability of a machine, to enhance accuracy and efficiency in their operations.

81%

48%

Staff safety

value of their output.

60%

36%

adopting AI/ML?

**47%** 

41%

**36%** 

Conclusion

faster results.

**BLERP** 

**JIM BRUGES** 

Staff Solutions Engineer, Edge Impulse

Real-time sensor insights

boost manufacturing

Many of our customers are working to train

models that combine human intelligence with

### efficiency and safety Where are manufacturers looking to use AI/ML to improve manufacturing?

**75%** Production quality

**59%** 

Equipment management

Manufacturing process

54% Environmental quality

53% Staff efficiency

Manufacturers are already leveraging a variety

of sensing technologies throughout their

production environments. The resulting data

enables manufacturers to improve accuracy

and automation, which directly increases the

Al can improve worker safety

Respondents rate staff

monitoring as "very" or

"extremely" important.

step in their projects.

Over 60% are considering

implementing AI solutions

for worker safety as a next

is a competitive edge

Having internal AI expertise

To stay competitive,

manufacturers must

expertise. Budget and

the top barriers to Al

a significant hurdle.

What are manufacturers' top barriers to

prioritize building internal

integration challenges are

adoption, with more than a

a lack of staff expertise as

third of manufacturers citing

**Budget constraints** Difficulties integrating with existing systems Lack of staff expertise

Manufacturers integrating AI directly on devices known as edge AI — are well-positioned to tackle today's complex challenges. By processing data within the production environment, they save

bandwidth, strengthen data privacy, and achieve

Bandwidth: By running algorithms ondevice, you avoid sending sensor data

**Latency:** On-device algorithms can be much more responsive, since there's no roundtrip to the cloud required, leading to lower latency.

**Economics:** Reduced connectivity demand can save on both BOM (Bill of Materials) and network communications costs, and removing the need for cloud-hosted AI systems can lower

recurring spend — achieving significant

**Reliability:** By removing the reliance on

economic savings over time.

to the cloud, reducing the level of

connectivity required.

connectivity and communication, on-device Al systems are potentially more reliable than those in the cloud, which is essential for applications where safety and user experience are critical. **Privacy:** Edge AI allows you to benefit from Al without data leaving the device, ensuring user privacy.

Manufacturers now understand and are

adopting this technology for a range of

applications as a way to lead their industries

See how Edge Impulse can help your

manufacturing environment and processes.

business bring edge AI into your

Head of Product, Edge Impulse

and stay competitive.

**ALESSANDRO GRANDE** 

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