# The case for adaptive intelligent applications

**Boosting the IQ of ERP, manufacturing, and customer experience systems**

Businesses are under tremendous pressure to deliver early insights, detect anomalies in their processes, and provide expert guidance to employees in their everyday decision-making. This is where traditional ERP, manufacturing and customer experience systems are starting to fall short. The world's leading businesses have understood that the solution lies in wedging Artificial Intelligence (AI) and Machine Learning (ML) into their systems, bulking up their ability to move from automation to becoming autonomous.

Oracle is among the technology leaders delivering an early response to the emerging needs of businesses to become more "intelligent". Oracle is doing this by injecting adaptive intelligent applications into business systems in a bid to make them autonomous. These adaptive intelligent applications stitch data from sensors, from enterprise and partner systems and third party data. They then apply domain-specific models, frameworks and algorithms, paving the way for predictive intelligence and autonomous decision-making.

Typically, as an example, this would translate as an ERP system identifying relevant suppliers for a given requirement. Ordinarily, an ERP system would have stopped at listing suppliers from its data store. The act of decision-making would have been left to a human executive. Often, executives, working with limited data—or conversely, with too much data—are prone to making flawed decisions. But by arming ERP with intelligence, everything changes. With the added intelligence, ERP is able to take sophisticated actions like categorizing suppliers, scoring them, and mapping them against specific needs to surface the right recommendations.

## Finding answers to complex questions

Using adaptive intelligent applications, businesses can find answers to complex questions such as "What products should I source from which supplier?", "What must I do to reduce the carry cost of fulfillment?", "Which of my supplier segments is at risk?" or "Which suppliers are the best prospects for a dynamic discounting program?"

It is easy to see why adaptive intelligent applications are becoming vital in complex manufacturing systems. These are environments where the variables involved in any decision are exceptionally large. Take the case of a plant that manufactures gear boxes. Assume that some gear boxes are failing a mandatory noise test. For the manufacturer, this would mean tracking operators on the assembly line, for which the data would have to be drawn from human capital management systems, identifying component lots used in assembly from ERP, tracing this back to suppliers from supply chain management systems, and examining machine sensor data from the assembly line. Correlating these parameters to identify the root cause of failure can take days of triage time. But using adaptive intelligence, these systems can identify the cause of failure in hours (even within minutes or in real time), map them against KPIs and thresholds and give recommendations for corrective action. Smart manufacturers are using adaptive intelligent applications to identify impacted products, processes, suppliers and customers.

## The intelligent approach to complex processes

In essence, the days of buying vanilla ERP, manufacturing and customer experience systems to address business needs are over. It has become necessary to add adaptive intelligent applications into the mix to address the consequences of the rising complexity of modern business processes.

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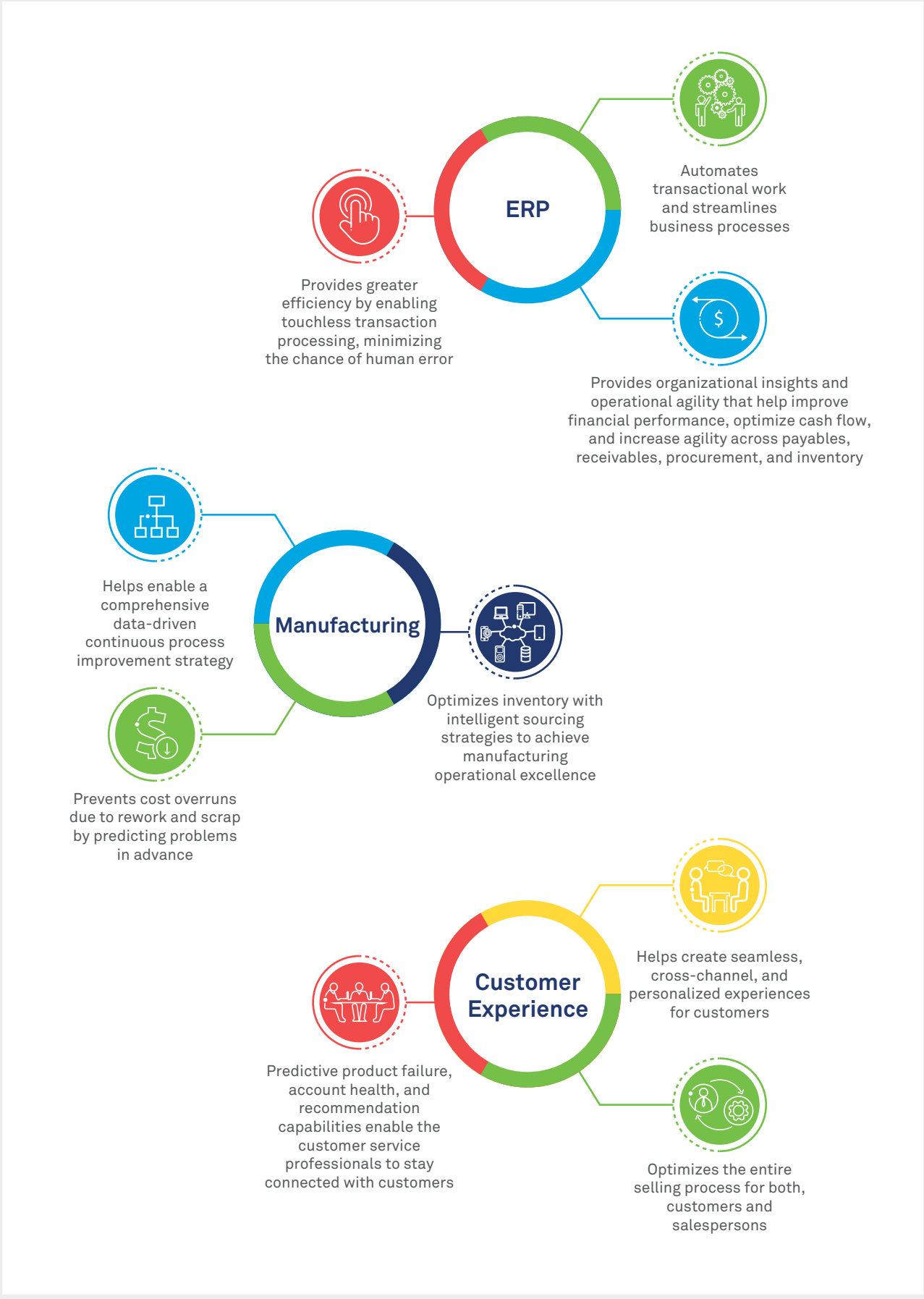
The nature of business complexity becomes explicit in the case of a UK-based construction services company. Variants of the company's problems—and the solutions it created—apply to any business today.

With the multiple acquisitions the construction company made, it was saddled with diverse, non-standardized processes. Finance and accounting processes with leakages and peer-to-peer risks began to surface. The company had data across four different ERP systems with cross-platform anomalies and had to use a third party service provider for periodic audits of the data. It faced rising recovery costs due to the lack of pre-emptive detection.

The company leveraged an intelligent anomaly detection platform to enhance its audit process. Using AI, it enabled pre-emptive detection and reduced fraud and recovery cost by over 95%. The company also reduced risk by ensuring data integrity across the four ERP systems.

The intelligent application used a variety of techniques to address the problem of leakages, recovery, and risk. This included machine learning and pattern-based predictions, automated learning from investigator feedback, and self-learning from past incidents. The AI also helped reduce false positives, adapt to changing business processes, detect new fraud schemes, prioritize red flags and offer expert guidance on optimal recovery processes when required.

Some of the clear advantages of deploying adaptive intelligent applications on top of ERP, manufacturing and customer experience systems include:




The advantages of adaptive intelligent applications for ERP, manufacturing and customer experience systems

Today's businesses need to rapidly adapt to a variety of changing trends ranging from cost and quality pressure to complex global supply chains, and from flexible production models to environment, health and safety processes. Simultaneously, businesses need to embrace disruptive technologies such as wearable devices, robotics, drones and IoT.

Machines, humans, IT and assets are getting connected to create new products and deliver customized services.

In this scenario, organizations are finding it difficult to achieve efficiency, effectiveness, visibility and business process simplification. Adding adaptive intelligent applications to business systems is now a necessity. It is the equivalent of boosting the organization's IQ.

## About the author

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With more than 23 years of experience, Mahesh is responsible for running the Oracle Cloud PaaS & IaaS Practice, building future-ready solutions, and rolling out Oracle on Oracle solutions. He has helped many clients successfully implement these solutions. He has been a speaker at leading industry forums such as Oracle OpenWorld.

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