

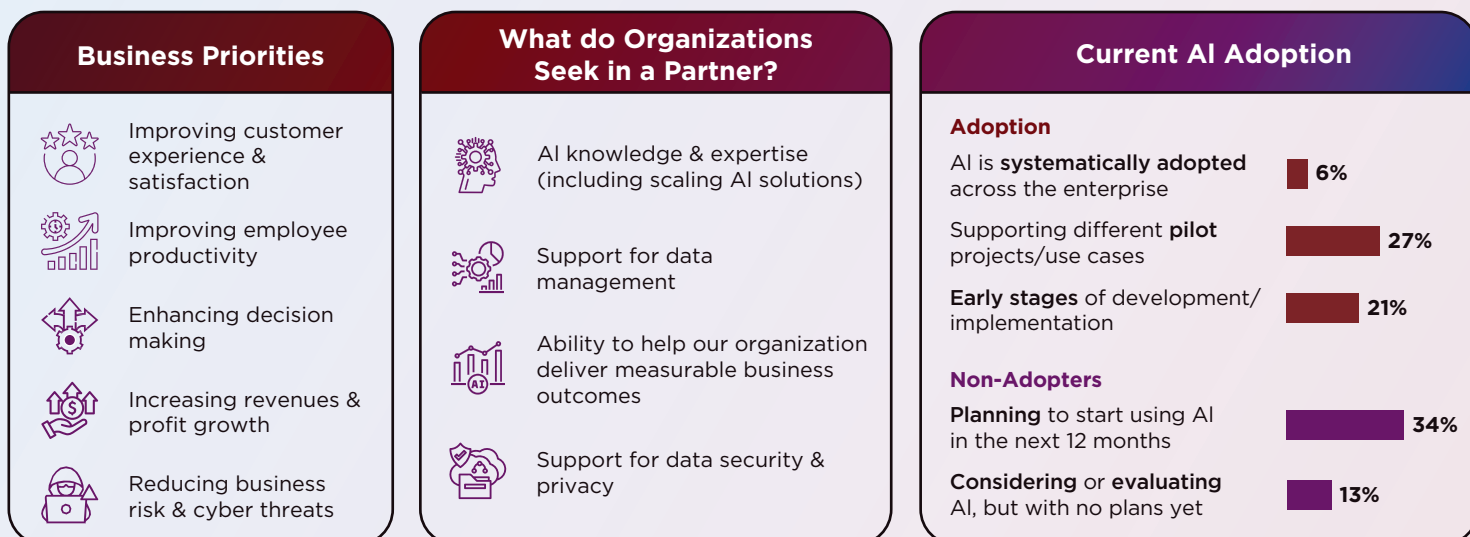


Asset Tracking

Smart Technology with AI drives the Future of Manufacturing

While the manufacturing sector is large and diverse, its core companies remain sharply focused on operational efficiency and product quality. To achieve this, manufacturers are increasingly adopting AI to enhance customer experience, productivity, and decision-making—with 34% planning implementation within a year. Interpretive AI (39%) and generative AI (39%) are top priorities, driven by a 159% surge in AI investment. Success hinges on sufficient budget, management commitment, and strong AI partnerships, while overcoming hurdles like scaling challenges, IT costs, and data quality.

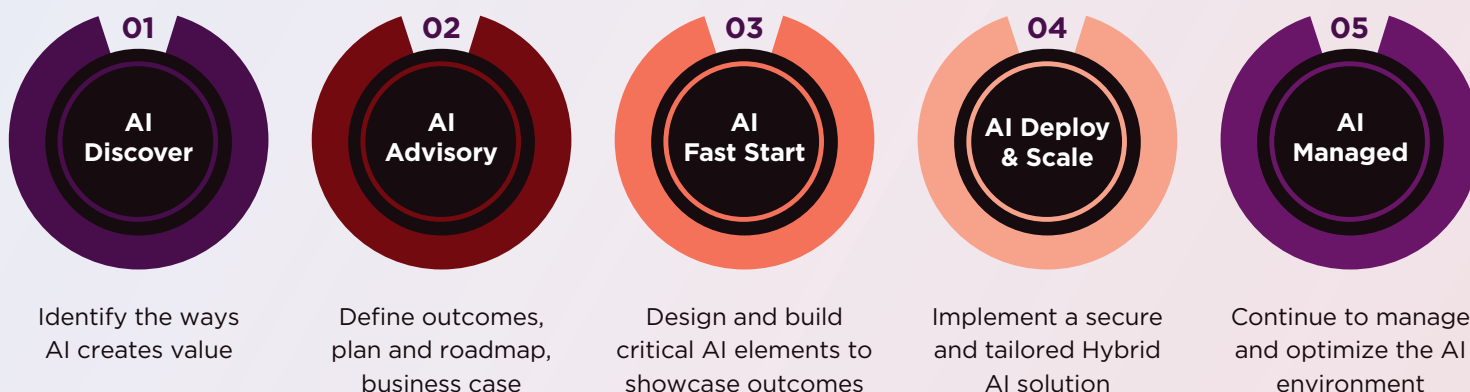
Data is central to AI in manufacturing, with production, supply chain, and quality control data as key inputs. Nearly a third of manufacturers aim to improve data management—critical for AI adoption. The primary approach is to adopt on-premises, private, or hybrid infrastructure for AI workloads, with manufacturers seeking partners for AI expertise to scale solutions.



Lenovo AI Services: For every stage of the AI journey

AI Readiness Methodology
Security | People | Technology | Processes

Proven Responsible AI Framework



Outcomes Definition and Rapid Innovation

Production

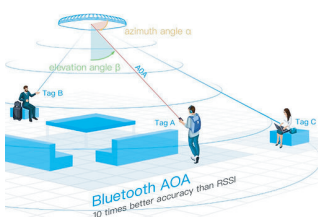
Optimization



Incorporated Real Time Locating System (RTLS) technology, our Asset Tracking solution automatically identifies and tracks the real-time location of objects or people. With targeted tracking, items equipped with tags and utilizing wireless transmission technologies such as Bluetooth AOA and ultra-wideband (UWB), our system provides accurate and reliable location tracking services in various scenarios.

Locating Technology

Asset Tracking uses the Angle of Arrival (AOA) positioning algorithm to improve the 5-meter accuracy of traditional low-precision Bluetooth by ten times, reaches 0.1-0.5 meter average accuracy.



Protocol	Bluetooth AOA Anchor BT5.1, Tag BT4.0+	Bluetooth RSSI Anchor BT4.0+, Tag BT4.0+	UWB Anchor UWB, Tag UWB
Typical accuracy	0.1 - 0.5 m	5 - 10 m	0.1 - 0.3 m
Refresh rate	High	Low	Medium
Compatibility	Various tags such as mobile phones, bracelets, watches, Beacon, etc.	Additional special tags for return channels such as LoRa are required	UWB Tag
Tag power consumption	Low	High	High
Anchor cost	General	Low	High
Tag cost	Low	High	High
Downlink broadcast capability	Yes	Yes	No
IoT anchor capabilities	Yes	No	No

System Configuration



1 AoA Anchors



The AoA anchors not only provide high-precision positioning services, but also serve as a Bluetooth IoT gateway, allowing seamless access to all kinds of Bluetooth IoT sensor data.

2 Personnel Tags

3 Asset Tags

4 Personnel Tags



BT positioning tags are located by anchors. Different types of positioning tags are used to locate people, vehicles, and devices.

5 Locating and value-added SWs



Warehouse

Locate pallets, forklifts, personnel, improve inbound/outbound efficiency



Production line

Locate materials, carts, tools, WIP, personnel, secure production continuity



Chemical

Locate equipment and personnel, monitor risk control area, improve safety management



Health care

Locate medical equipment, patients, support medical and nursing resource scheduling

Lenovo's global strength

180

Markets

10M+

Order lines per year

1B+

Global customers

120M+

Shipments

30+

Global manufacturing sites

2000+

Suppliers

>\$160M

Digital transformation
investment

18

R&D locations worldwide

69.5K

People



Global supply chain ranked
8th by Gartner®



World Economic Forum
Global Industry 4.0
Lighthouse Recognition



AAA-rated for ESG by MSCI

Smarter asset tracking illuminates
operational blind spots like never
before.

**Lenovo Asset Tracking optimizes
resource efficiency end-to-end
with real-time spatial intelligence.**

Contact us today to discover how Lenovo Manufacturing
Solutions can bring the future of manufacturing to you.
Learn more on: <http://lenovo.com/manufacturing>