

Study: Companies using AI and IoT together catapult ahead of competitors using IoT alone

AI and IoT adoption increase as leaders target revenue growth, faster planning

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A recent survey of global business leaders reveals the most significant predictor in realizing value from Internet of Things (IoT) initiatives across an organization is the heavy use of artificial intelligence (AI). Ninety percent of survey respondents heavily using AI in their IoT operations reported exceeding value expectations. The research also showed organizations using IoT with AI appear to be more competitive than IoT-only enterprises by a double-digit margin across a variety of business indicators like employee productivity, innovation and operating costs.

"In these results, we are seeing that organizations working with IoT data realize that if they want to get the real value out of the data, they need AI and analytics," said Oliver Schabenberger, Chief Operating Officer at SAS. "I think it is fair to say that most successful IoT operations are actually AIoT operations." AIoT is defined as decision making aided by AI technologies in conjunction with connected IoT sensor, system or product data. AI technologies include deep learning, machine learning, natural language processing, voice recognition and image analysis.

Business leaders expect to increase revenue with AIoT

The study, conducted by SAS, Deloitte and Intel with research and analysis from IDC, asked 450 business leaders from around the world about their use of IoT and AI technologies. Other key findings include:

- 79% of senior leaders are involved in IoT project decisions, and 92% of those leaders say that AIoT value exceeds expectations.
- 68% of companies rely on IoT data to inform daily operational decisions through spreadsheets and other non-AI technology. Only 12% of respondents use IoT to inform planning decisions, but when AI enters the picture, respondents using the data for daily planning increases to 31%.
- 34% of respondents said increasing revenue is the top goal for using AIoT. That's followed by improving the ability to innovate (17.5%), offering customers new digital services (14.3%), and decreasing operational costs (11.1%).
- Companies that have developed AIoT capabilities report stronger results across critical organizational goals including the ability to speed up operations, introduce new digital services, improve employee productivity and decrease costs. For example, companies using IoT data to speed up operations without AI saw a 32% increase; companies adding AI to the mix saw speeds improve by 53%.
- Business intelligence (33%), near-real-time monitoring and visibility (31%), and condition-based monitoring (30%) topped the list of analysis techniques used with IoT projects.

"AI and IoT are no longer in separate swim lanes," said Melvin Greer, Chief Data Scientist at Intel Americas. "AI closes the loop in an IoT environment where IoT devices gather or create data, and AI helps automate important choices and actions based on that data. Today, most organizations using IoT are only at the first 'visibility' phase where they can start to see what's going on through IoT assets. But they're moving toward the reliability, efficiency and production phases, which are more sophisticated and require stronger AI capabilities."

AIoT capabilities play a bigger-than-expected role in rapid planning processes

Companies relying on IoT data to inform daily decision making overwhelmingly use it for operational decisions (68%) by employing spreadsheets and other non-AI technology.

For Gautam Khera, Senior Director at Western Digital, a leading infrastructure provider, AI already has a practical impact on the company's IoT strategy. "How do we build our storage devices and learn fast?" he said. "How do we ensure the quality and yield? How do we get a faster time-to-market, time-to-cost? We're using AI schemes to help us do that internally in our development processes, in our R&D, and in our factories."

This important leap signals that AI opens the door to more sophisticated and rapid decision making that significantly affects results. It broadens focus from operational problems like, 'Is the equipment running or not?' to decisions about supply and demand, product quality, retail merchandising, or the spread of illness in a health care facility.

IDC's Maureen Fleming, Program Vice President for Intelligent Process Automation, agrees with Khera. "Improving the speed of data refresh in collecting sensor data combined with AI expands an organization's ability to focus on immediate planning while also quickly identifying and resolving operational problems. The combination produces greater agility and more efficiency."

Manufacturers among top industries putting AIoT into play

Western Digital's Khera said they had to be persistent and keep pushing on pairing IoT data with AI. "Those projects are now our plan of record process to use AI," said Khera. "It's working well, and it's trusted across the board. We are now using advanced analytics to help us tackle problems in R&D. I can use various advanced analytic techniques to understand the shape of my data, to understand the features, what are the drivers, I can look for hidden effects for anomalies that traditional techniques or the human eye just won't see."

Jay Cei, Chief Operating Officer at Ulbrich Steel, a global metal manufacturer, said his priority is to gain acceptance for AIoT across the company. "People are going to fear losing their jobs," Cei said. "What I really believe is [AIoT] is going to enable them to function at least two levels higher than they can now. I really see these operators functioning as business unit managers as a result of this. I'm looking at SAS® Analytics for IoT as one of the AI-embedded solutions for me to use to get us to be able to better execute our capabilities-driven strategy."

AIoT success means starting at the top

For AIoT success, the bottom line is to start at the top according to Andy Daecher, Principal, Deloitte Consulting LLP and Internet of Things Practice Leader. "These initiatives really have to be on the CEO's agenda," Daecher said. "He or she needs to repeatedly say, 'this needs to happen in our organization.' You can't have a successful AIoT initiative without the business initiating it, period. These are really business initiatives, not technology initiatives."

Download the full report, AIoT- How IoT Leaders Are Breaking Away, from SAS. Follow SAS on Twitter @SASsoftware, on LinkedIn, and on Facebook.

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