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VISION REPORT

# Generative AI And Synthetic Data Will Help Deliver The Promise Of AIOps

## Vendors Will Tap The Potential

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By Carlos Casanova, Rowan Curran with Charles Betz, Karsten Monteverde, Kara Hartig

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## Summary

AI/ML-driven solutions continue to expand for IT and digital operations. However, such solutions require access to data that may be difficult or impossible to access for model training purposes. Leveraging synthetic data will help with the critical time to AI for IT operations (AIOps) value, such as powerful autoremediation capabilities and enhanced decision-making. This report summarizes generative AI (genAI) survey results and how genAI will benefit AIOps and observability implementations.

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# AIOps And Observability Models Require Time And High-Quality Data

Results from the recent Forrester Wave™ on AI decisioning platforms and that on AI/ML platforms demonstrated both great advances and a long road ahead for many diverse use cases. IT operations, site reliability engineering, and observability teams are using more, and more advanced, AI-based solutions to support their daily activities. These offerings need an exhaustive amount of training data. For IT solutions to succeed in taking advantage of ML capabilities, they need relevant high-quality data in sufficient quantities for advanced analytics and data science techniques. However, the IT landscape is an ever-evolving environment where sourcing useful data is time and resource intensive — too often it is unavailable, incomplete, or technically inaccessible — especially in new settings and deployments. AIOps and observability solutions must address the following:

- **AIOps models need trusted high-quality training data.** AIOps and observability solutions need to understand events from the past to learn from it regardless of the sophistication of the technology and algorithms. The underpinning models must learn from the patterns and behaviors of the environment they enter to make vital decisions, and they cannot do so accurately without sufficient training data. AI can help, but global data and analytics decision-makers at enterprises have concerns about using AI technologies (see Figure 1). GenAI can help fill the gap when training data for digital products, services, applications, or environments is not available from traditional sources. For example, maybe the history lacks, a certain scenario does not exist, or private or secure data (e.g., financial services logs that include personally identifiable information) cannot be leveraged for testing.
- **Models in AIOps offerings need to work on day one of deployment.** The velocity of business has always been challenging for IT organizations. The longer an AIOps or observability solution takes to learn the behaviors of the environment, the longer the time-to-value cycle takes. In Forrester's July 2023 Artificial Intelligence Pulse Survey, 61% of AI decision-makers said that a driver for using or considering using genAI for model training was to accelerate training time. Relying on model learning once a new release goes to production may not meet the requirements of business operations and competitiveness.
- **Availability of data does not mean it's good enough to use (e.g., garbage in/garbage out).** Bad data quality has been the Achilles' heel of digital systems since the earliest days of computing. Training AI models requires large quantities

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of high-quality data to trust and successfully use outputs. Although 89% of AI decision-makers at enterprises said that they are using, or considering using, genAI as part of their model training, training models requires high-quality data, which challenges enterprises. Global business and technology decision-makers at enterprises noed various data management challenges in Forrester's Future Fit Survey, 2023 (see Figure 2). This disconnect is worrisome because models trained on inaccurate or biased data could very quickly reinforce harmful behaviors. Coupled with unexplainable AI, the actions could easily have legal, regulatory, or compliance implications for the organization.

- **Data is available for training but in insufficient quantity.** Often the existence of data is not the concern; the quantity of usable training data is (see Figure 3). In Forrester's July 2023 Artificial Intelligence Pulse Survey, AI decision-makers at enterprises who are using or considering using genAI for model training said that the data exists but it's restricted (34%) or there is not enough of it (13%) to train models. This is a major issue if models fully encompass the topic of their training. Properly training the model requires high-quality, unrestricted, and comprehensive data sets.

- **Enterprisewide investments continue while concern in leadership grows.** A 2023 Forrester survey on AI exposed a disconnect between executives' confidence in AI use and capabilities and the realities of implementation, which mire tech teams in daily challenges. We highlight this as a cautionary tale for technology leaders who might unknowingly be part of this demographic. For example, in the July survey, 40% of AI decision-makers at enterprises said that they are concerned that their executive leadership does not understand genAI. In addition, 72% said that they are experimenting with or expanding the use of genAI, and 94% of those with a genAI strategy anticipate an increase in their investment in the next 12 months.

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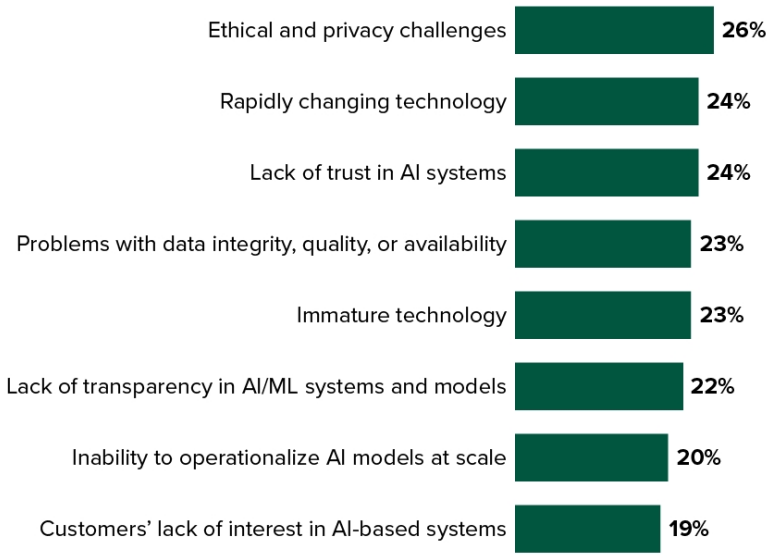
## Figure 1

Trust Issues Abound In AI

**"Which are the biggest concerns for your organization when it comes to using AI technologies?"**

(Five responses accepted)




Note: Not all responses are shown.
Base: 1,809 global enterprise data and analytics decision-makers
Source: Forrester's Data And Analytics Survey, 2023

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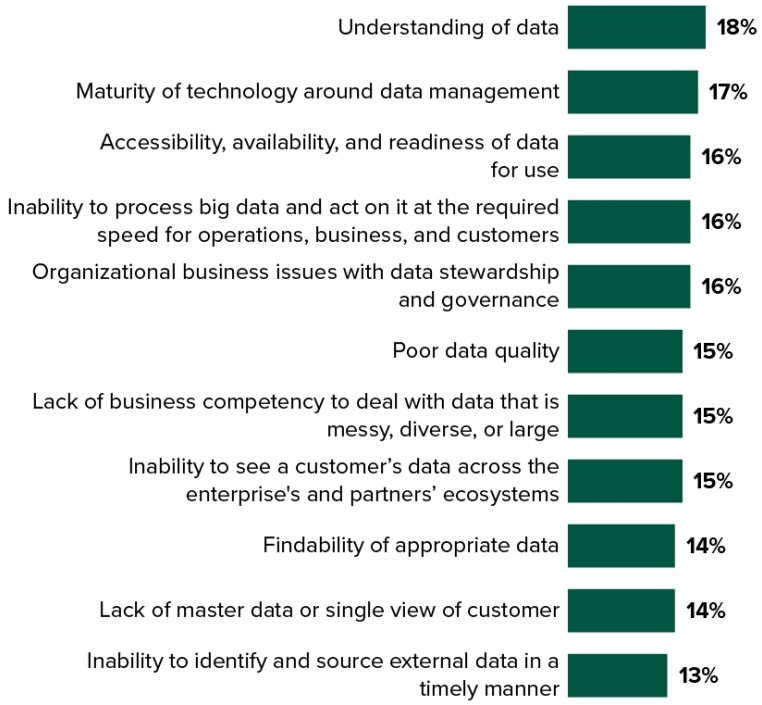
## Figure 2

Data Management Challenges

**"What are/were the biggest challenges in executing your vision for data, data management, data science, and analytics?"**

(Five responses accepted)




Note: Not all response options are shown.

Base: 1,228 global enterprise business and technology decision-makers

Source: Forrester's Future Fit Survey, 2023

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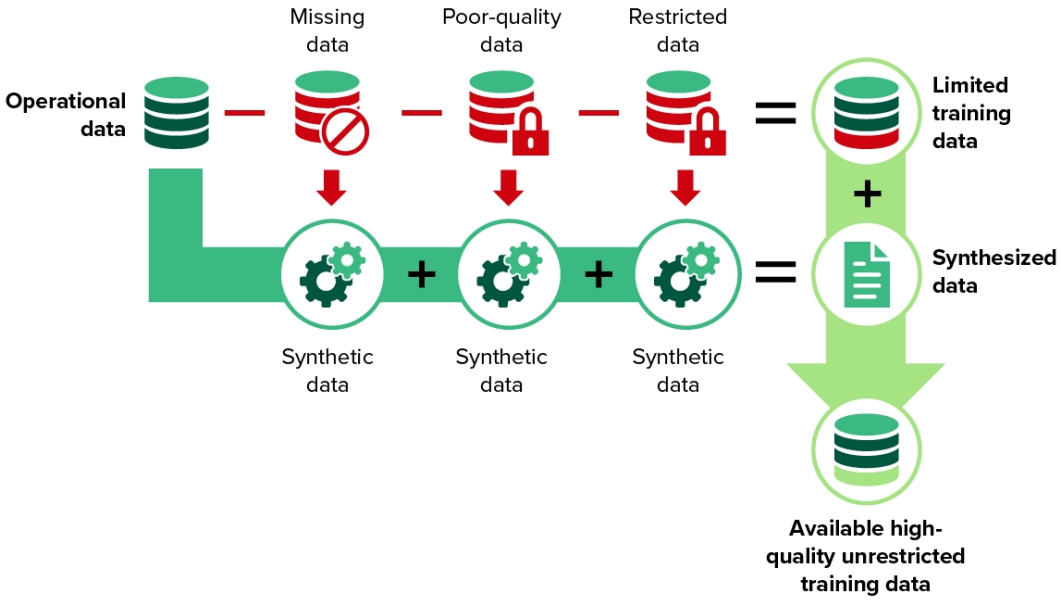
**Figure 3**
**The Composition Of Training Data**

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# Adaptable Models Are The Basis Of Successful AIOps

Like any innovation scaling to broad-based value, AIOps and observability solutions must prove their stability and resilience to skeptical operators. Confidence in AI can result when organizations leverage the seven levers of trust (see Figures 4 and 5). Using genAI to generate synthetic data sets for training models can also address issues of privacy and security. Consider the following key points as you develop and deepen your AIOps models:

- **Stressful operations result from lack of stress testing of models.** Dynamic fast-paced businesses naturally create stressful settings with perpetual tension between the routine and commoditized versus the unknown and innovative. Even in well-understood systems, unknown scenarios will occur, and AI models must deal with them in real time. The more scenarios an AI model experiences and learns from, the better equipped it is to handle them. Unforeseen scenarios in production environments will undoubtedly pose risks to business operations.

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Indeed, 58% of AI decision-makers at enterprises who are considering or using genAI for model training in Forrester's July 2023 Artificial Intelligence Pulse Survey said that they are looking to genAI to stress-test models for stability and resilience.

- **Early bias identification is vital to mitigate countless risks.** Bias is unavoidable, but it can be mitigated with deliberate efforts, and 51% of enterprise AI decision-makers who are considering or using genAI for model training plan to use genAI to identify potential bias. GenAI can help identify and address potential model bias before deployment. Other methods such as bias bounties and third-party audits should also be leveraged. Incomplete or biased training data can result in algorithmic bias. While poisoning data to cause algorithmic drift is a favorite of attackers, it could serve a white-hat approach. Synthetic data can supplement incomplete data and could expose bias if strategically positioned.

- **Security operations could benefit greatly from a fresh approach.** Security operations are constantly battered with new vulnerabilities and threats. Zero Trust has greatly improved the security posture of organizations, but the battle with nefarious actors will never end. Utilizing synthetic data to help identify reactions to unexpected accidental or deliberate stimuli was a driver for 35% of AI decision-makers at enterprises in considering or using genAI for model training. Testing AI models with synthetic data to better understand security-related model weaknesses could alter investments, processes, and other IT operational activities that collectively improve stability and reliability.

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**Figure 4**

The Seven Levers Of Trust

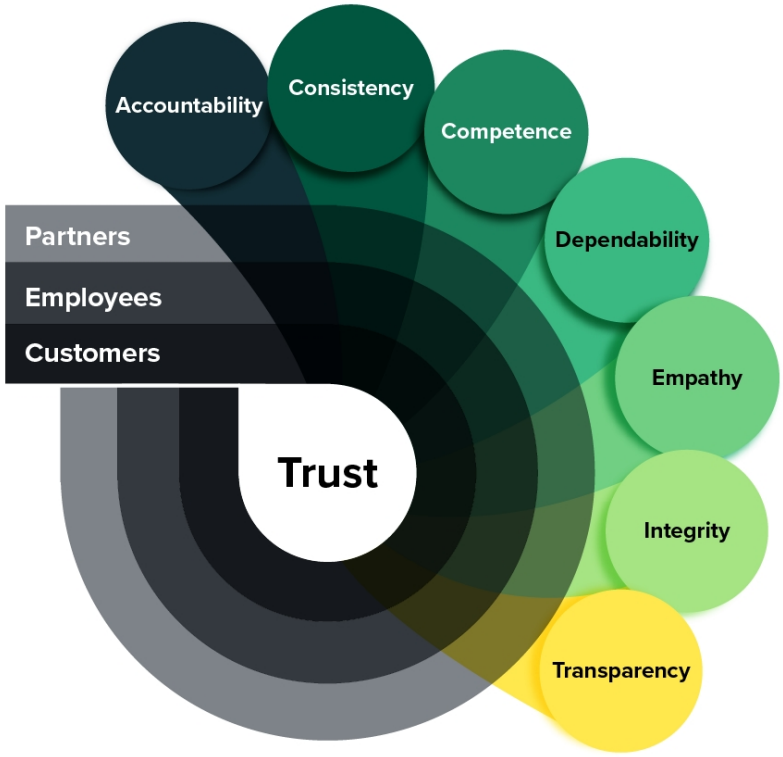


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**Figure 5**

**Characteristics Of The Seven Levers Of Trust**

| Lever | Description |
|---|---|
| Accountability | The confidence that an organization takes responsibility for what it does and says; provides satisfactory reasons for its words, decisions, and actions; and is ready to bear the potential consequences |
| Competence | The recognition of an organization of its expertise and the belief that such expertise enables it to do something successfully or efficiently |
| Consistency | The expectation that an organization will always behave or perform in a similar way so that individuals can confidently rely on the expected behavior or performance in their own plans, actions, and assumptions |
| Dependability | The expectation that an organization will be available, reliable, and able to predict and meet individuals' needs and demands |
| Empathy | The perception that an organization is emotionally connected to its customers, employees, and partners and understands and shares their feelings and experiences |
| Integrity | The belief that an organization acts honestly and according to values that individuals can easily recognize and that those values permeate the organization's brand, decisions, and operations |
| Transparency | The perception that an organization is doing business in an open way and making every effort to share information about the business that is based on accurate, verifiable facts |

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# Synthetic Data Has Huge Untapped Potential In AIOps

Collecting and storing vast amounts of data is costly, and worse, it goes largely unused or underused. Even enterprises with good data practices can benefit from leveraging synthetic data for model training in environments that are too novel, too sensitive, or too secure to use real data. To tap into the unrealized potential of synthetic data for AIOps:

- **Enterprises will educate themselves about the need for synthetic data.** Enterprises have not yet begun to use synthetic data to help train AI models largely because they are immature — they don't know what they don't know. Tech leaders will realize that they do not have enough high-quality unrestricted data and supplement it with synthetic data. Enterprises will also refine open-source and

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vendor-provided models with synthetic data to release capabilities that function as expected on day one, not weeks or months later.

- **Vendors will lead the way.** Enterprise buying decisions will be partly based on a product's ability to deliver value quickly, which in turn requires faster training. Vendors will architect their solutions to leverage synthetic data. Synthetic data can quickly improve a system's resilience through training models so that new patterns and trends unavailable in existing data can be detected and acted on sooner.
- **Enterprises will evaluate potential gaps that synthetic data can fill.** Enterprises will begin their evaluation of the quality and usability of their available data for training their ML models. Forrester's 2023 data shows that the current approaches for use of genAI in an enterprise are diverse (see Figure 6). As comfort grows with the use of synthetic data for training, novel use cases will surface. Roughly half of IT ops organizations are not yet exploiting the full opportunity that synthetic data provides, but every organization with significant digital estate will start thinking about it. The opportunity to use synthetic data in support of training and deployment of ML models is too great for IT operations professionals to not prepare for it.

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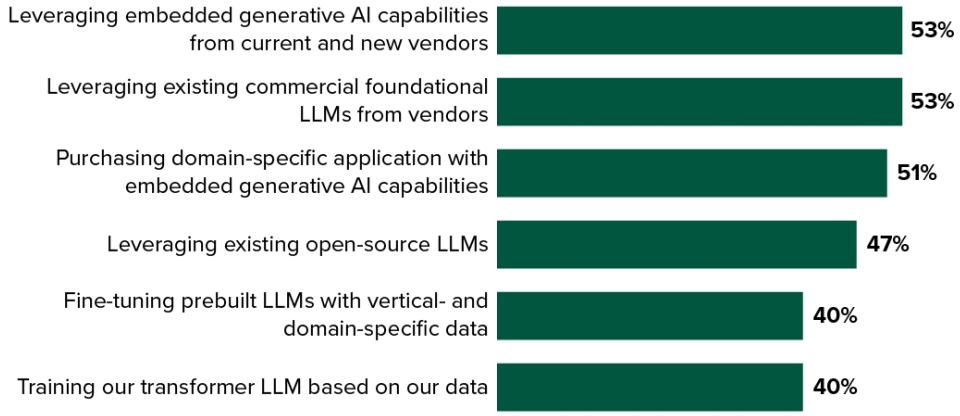
## Figure 6

Strategic Approaches To Generative AI Use

**"Which of the following approaches to adopting generative AI are part of your organization's generative AI strategy?"**

(Multiple responses accepted)




Base: 154 enterprise AI decision-makers whose organizations have a documented AI strategy

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