



The Future of Data-Driven Decision Making: Integrating Machine Learning and Data

precisely

Dave Wilkinson – D3Clarity, Inc.
Rochelle Grubbs – Precisely

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Welcome to Modern Technology



Recent innovations have revealed new and effective ways to not only transform your business but continually drive improvement. In modern business technology, the interplay between data governance and machine learning has become increasingly critical and a business transformation enabler.

- Data governance provides accuracy, accessibility, and security of the data.
- Machine learning can significantly contribute to the evolution of data governance practices.

The reciprocal relationship between data governance and machine learning can propel modern organizational efficiency.



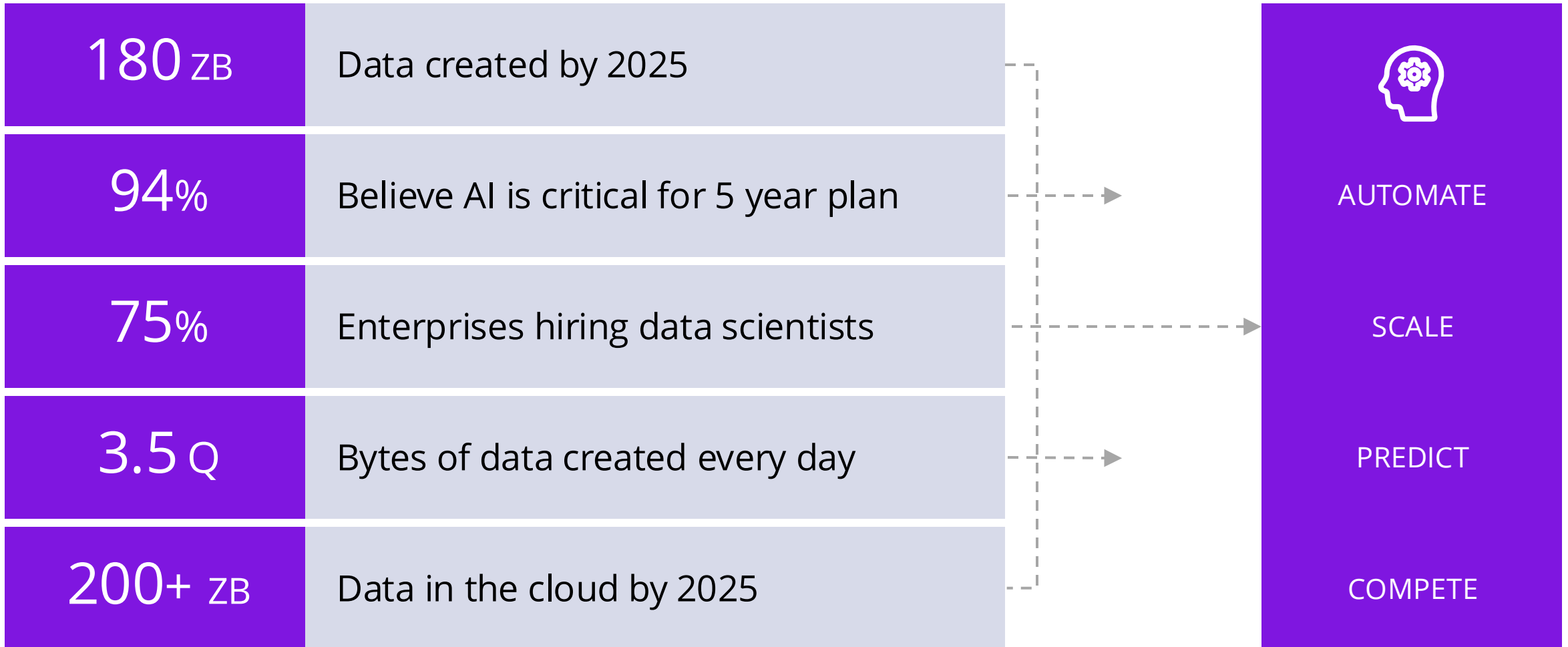


Discussion Points



- ML and DG, a perfect union?
- Defining Machine Learning (ML) and Data Governance (DG)
- Why ML and DG are Essential
- Why ML is Important?
 - Application and Impact of ML
 - Types of ML
- Why DG is Important?
 - The Impact and Influence of DG
- The Intersection of DG and ML
 - Benefits of ML in DG
 - Benefits of Well Governed ML
- ML and DG, a perfect union!
- Challenges and Considerations
- About D3Clarity and Precisely

Why GenAI and ML?



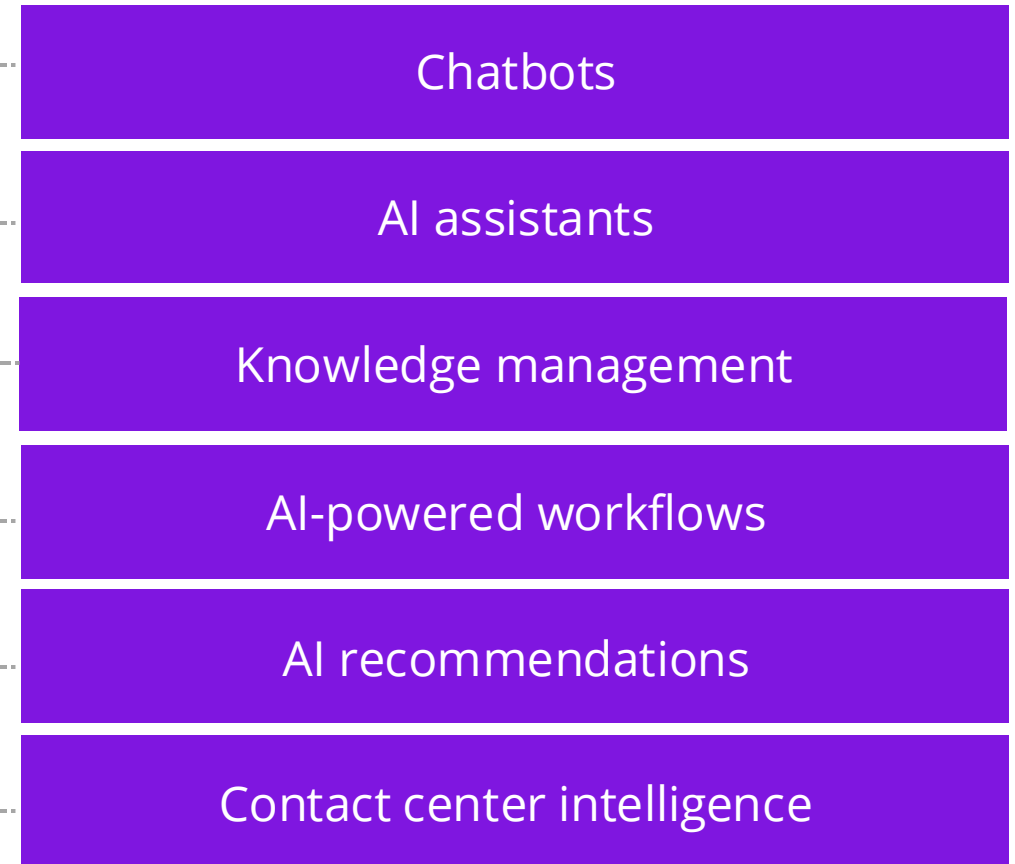
Chances are... You're Already Invested in ML/AI



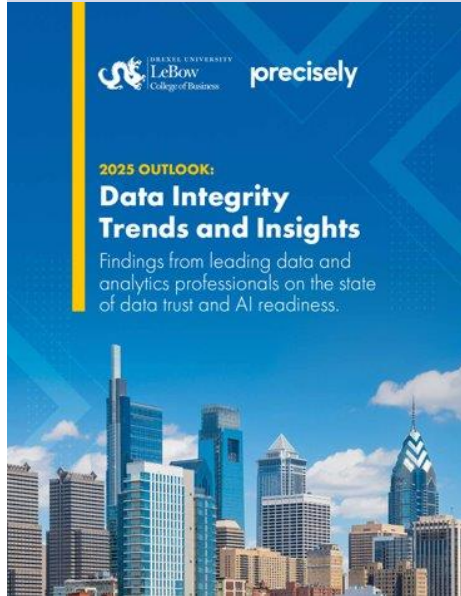
91%

of leading businesses have ongoing investments in artificial intelligence

Source: NewVantage

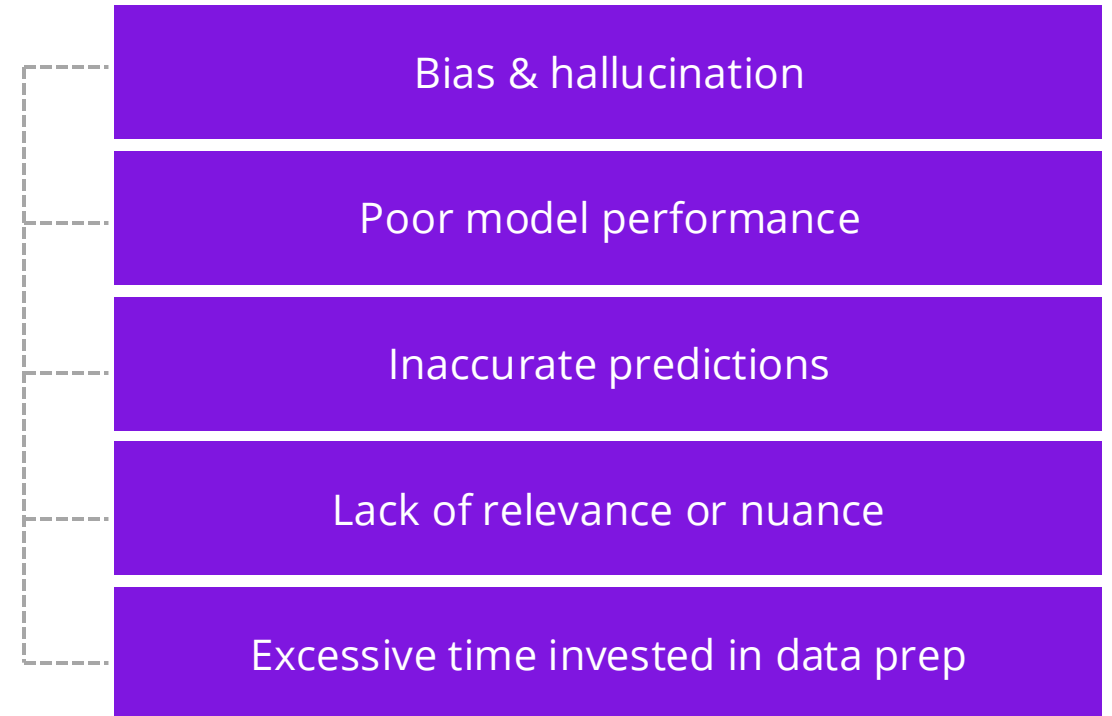


Chances are... Your Data is Not Ready



12%

Only 12% said their data was of sufficient quality and accessibility for AI



ML and DG, a Perfect Union?



- **Data Governance ensures four key aspects of data**
 - **Data Quality:** Ensuring data is accurate, complete, and free from errors.
 - **Data Consistency:** Ensuring data is consistent across all systems and uses.
 - **Data Security:** Protecting data from unauthorized access and breaches.
 - **Data Accessibility:** Making data easily accessible to those who need it.
- ML relies on high-quality, consistent, secure, and accessible data to function effectively.
- **Machine Learning can produce:**
 - **Models:** Produces models that analyze patterns and data relationships.
 - **Predictions:** Generates predictions based on historical data to forecast future trends.
 - **Decisions:** Enables automated decisions by applying learned insights to real-time scenarios
 - **Business Value:** Creates business value through optimized processes and strategic actions.

DG and ML Definitions



■ Defining Data Governance

- DG refers to the collection of practices, processes, and policies that ensure the proper management of data throughout its lifecycle.
 - It involves defining who can take what action, upon what data, in what situations, and using what methods.
 - The primary goal is to ensure data integrity, quality, security, and compliance with relevant regulations.

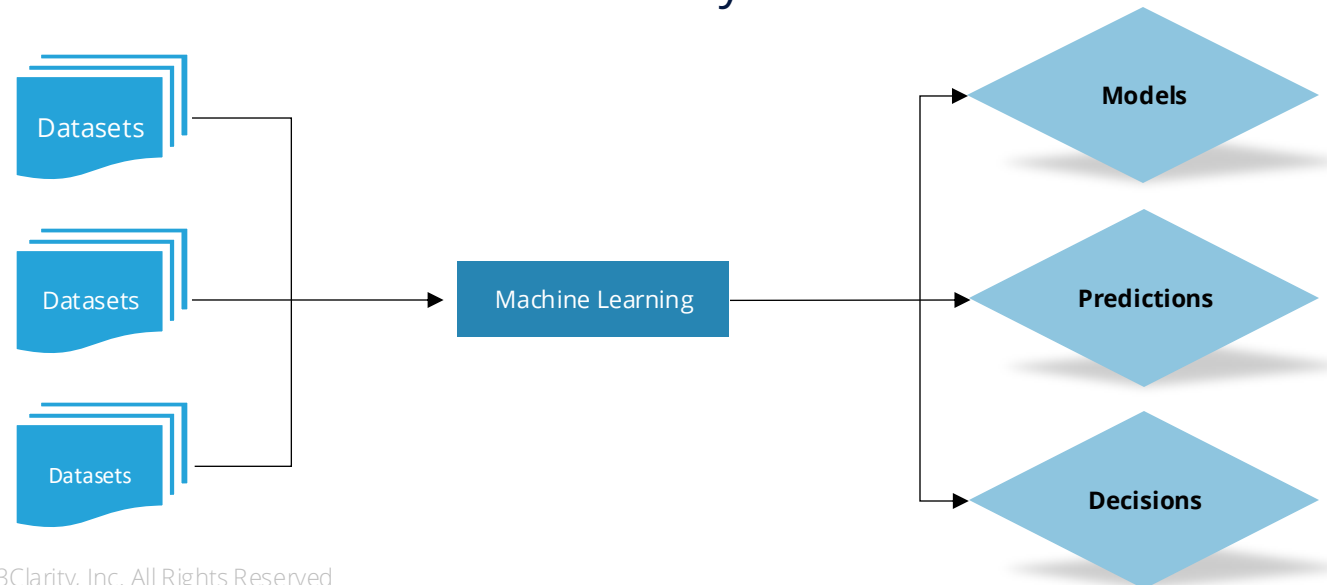
■ Defining Machine Learning

- ML is a form of artificial intelligence (AI) based on algorithms that improve automatically through experience and data usage
 - Represents a significant transformation in how software applications are conceived and implemented.
 - Unlike traditional software development, where every decision is meticulously coded by developers based on predetermined logic and rules, ML introduces an approach where algorithms glean insights from data to make decisions and predictions.

Why is Machine Learning Important?

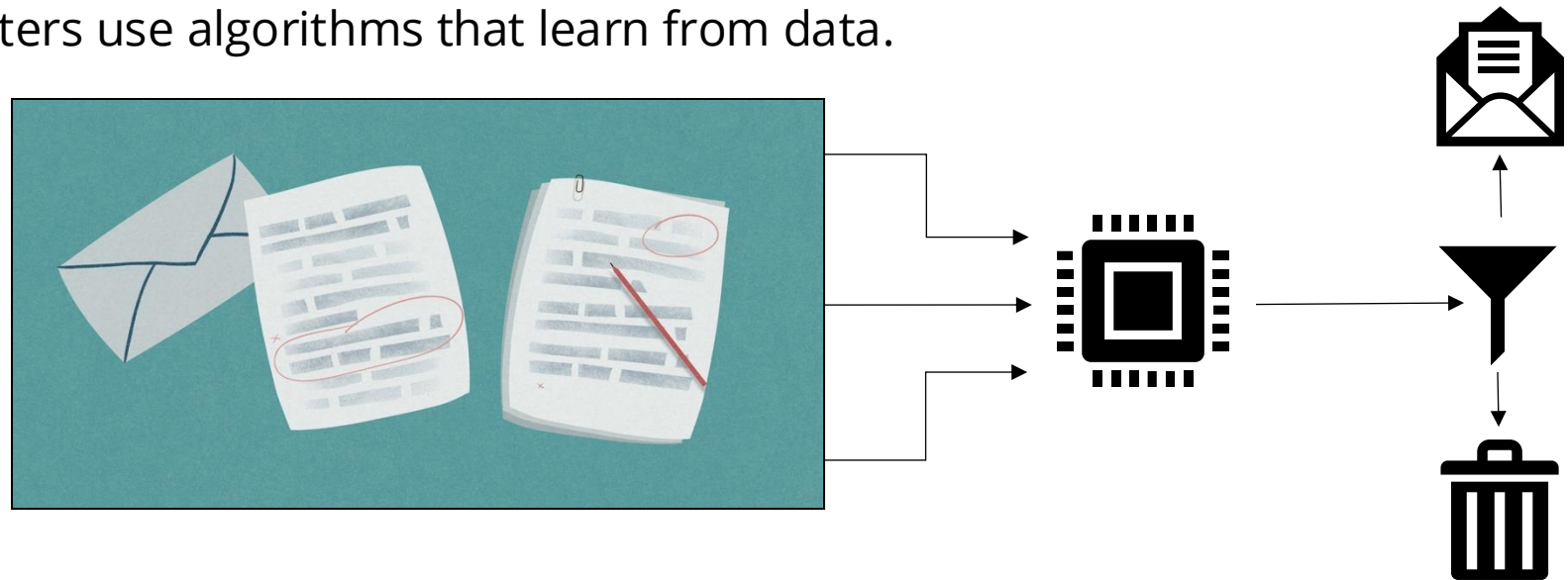


- ML was designed to solve the problem of analyzing and making sense of large, complex datasets that are beyond human capacity to process efficiently.
 - Traditional programming methods required explicit instructions for every task, which became impractical as data volume and complexity grew. ML addresses this by enabling systems to learn from data, recognize patterns, and make predictions or decisions without being explicitly programmed for every scenario.
 - It automates tasks like classification, anomaly detection, and forecasting, allowing organizations to derive valuable insights and make informed decisions faster and more accurately.



Application and Impact of ML

- ML can be illustrated through the analogy of transitioning from a manual decision tree—crafted by a programmer—to an autonomous machine learning model that derives its decision-making process directly from data.
- In the early days of email, spam filters were based on manual decision trees. These decision trees were essentially a set of rules hand-coded by programmers.
- With the advent of machine learning, spam filters became much more sophisticated and autonomous. Instead of relying on hand-coded rules, these filters use algorithms that learn from data.



Why is Data Governance Important?



DG was designed to solve the problem of disorganized, inaccurate, and inconsistent data management within organizations.

- As businesses generate vast amounts of data, they often struggle with ensuring its **accuracy, accessibility, security, and compliance** with regulations. Without a structured framework, data can become fragmented, leading to poor decision-making, regulatory breaches, and operational inefficiencies.
- DG addresses these issues by creating **policies, procedures, and standards** that ensure data is **properly managed**, governed, and aligned with organizational goals.
- It provides a solution for maintaining **data integrity** while enabling informed, data-driven decisions.

The Impact and Influence of DG



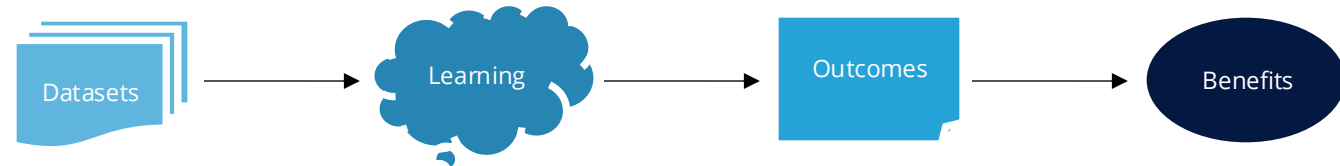
Consider a retail company struggling with inconsistent customer data across various systems, leading to inaccurate reporting and poor decision-making. Without a proper data governance framework, customer records are often duplicated or incomplete, making it difficult for the marketing team to personalize campaigns or for the sales team to track customer preferences.

- By implementing data governance, the company standardizes data entry processes, ensuring all customer information is consistent, accurate, and up-to-date across departments.
- Data governance also enforces security policies, protecting customer data from breaches and ensuring compliance with privacy regulations like GDPR.
- Additionally, with clean and reliable data, executives can make more informed strategic decisions, such as launching new products or expanding to new markets, leading to increased revenue and business growth.

Why are ML and DG Essential

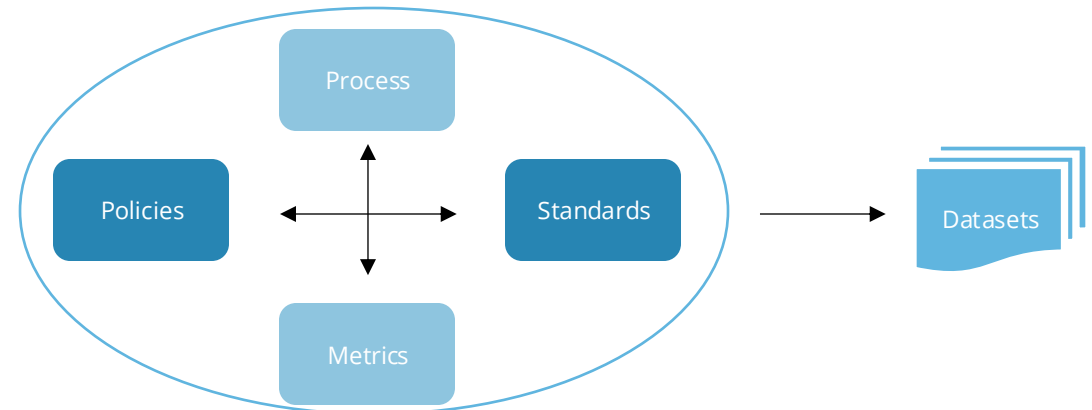
■ Machine Learning

- The foundational principle of ML is the capability to learn from examples rather than adhering to strict, predefined rules. It allows systems to manage, interpret, and make predictions from vast and intricate datasets that would be unmanageable for traditional programs.



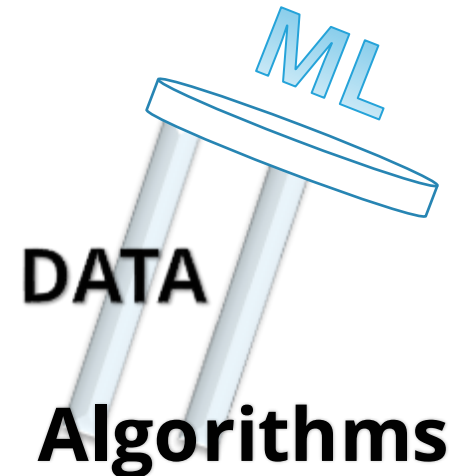
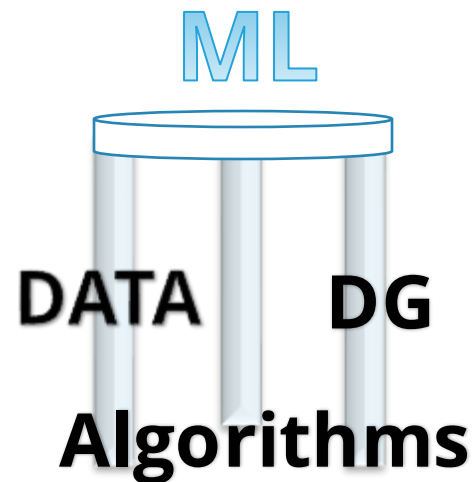
■ Data Governance

- DG encompasses the processes, policies, standards, and metrics that ensure organizations receive the most effective and efficient use of their information. It sets the parameters for data management and usage, creating a structured environment to ensure that data is both accurate and accessible.



Using DG to Support ML

- ML relies on DG, which ensures the data is high quality, accurate, consistent and aligned with business objectives.
 - Business objectives are set by people
- DG sets the foundation, alongside algorithms and data, for effective ML decision-making and contextually appropriate.
 - Even the most sophisticated ML algorithms can produce subpar results if the underlying data is flawed.



The Intersection of DG & ML



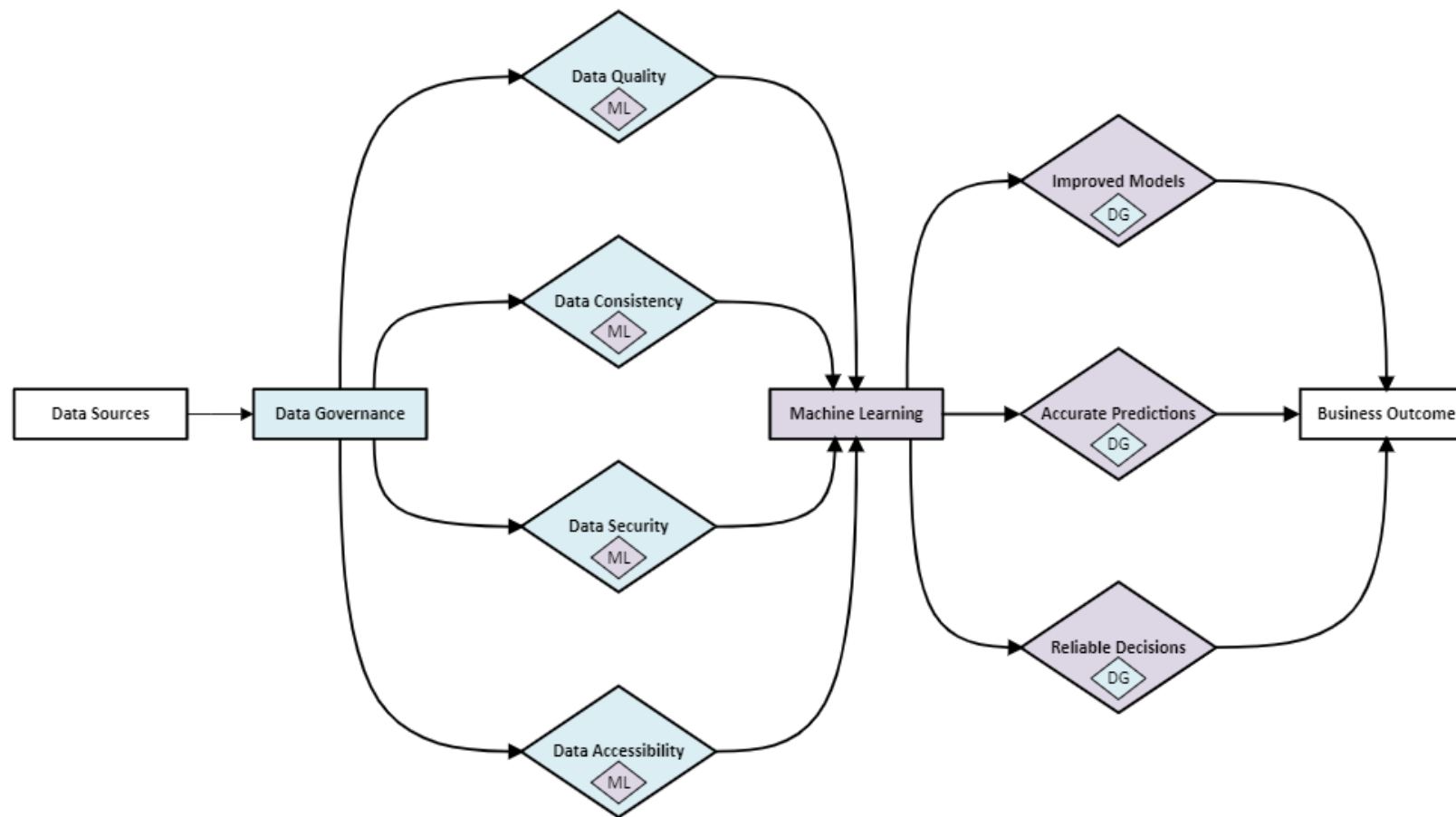
- **Machine Learning improves the four key aspects of Data Governance**
 - **Improved Data Quality:** ML models continuously analyze data streams, identifying and correcting errors to maintain data quality.
 - **Improved Data Consistency:** ML assists in maintaining uniformity and accuracy across all datasets, ensuring data is consistent across all systems.
 - **Improved Data Security:** ML can classify and protect sensitive data by enforcing security policies and ensuring compliance with regulations.
 - **Improved Data Accessibility:** ML algorithms can quickly analyze large datasets to identify patterns and group-related data, making it easier for users to find relevant information.

- **With well-governed data, Machine Learning can produce:**
 - **Improved Models:** Models that are more accurate and perform better.
 - **Accurate Predictions:** Predictions that are reliable and trustworthy.
 - **Reliable Decisions:** Decisions based on data that can be trusted.
 - **Business Value:** Enhanced decisions and operational efficiency drive growth, optimize costs, and improve business performance.

ML and DG, a perfect union!



Improved models, accurate predictions, and reliable decisions all contribute to better business outcomes and value creation.



Challenges and Considerations



While the benefits are significant, organizations must also consider certain challenges when leveraging ML as part of DG.

- **Data Bias and Accuracy:** ML models are only as good as the data they are trained on. Bias in data can lead to skewed and inaccurate models, which can negatively impact data governance processes.
- **Complexity of Implementation:** Developing and integrating complex ML models requires skilled personnel and significant technological resources. Data quality and quantity are critical, as algorithms require a substantial amount of high-quality data to learn effectively.
- **Privacy Concerns:** Using ML to handle sensitive data can raise privacy issues and legal and ethical considerations, necessitating robust mechanisms to protect data integrity and confidentiality.

Impacts of Bad Data on ML/AI



Bias

Lack of access to critical, relevant data can result in:

- Ageism & sexism
- Racial bias
- Classism, urbanism, conservatism, & anachronism



Inaccuracy

Lack of data quality and governance can lead to:

- Incorrect results due to hallucination
- AI failures
- Exposure of internal or private data



Irrelevance

Lack of data context and nuance exposes you to:

- Weak insight into real-world characteristics
- Poor decision making with severe impacts
- Missing nuance



About D3Clarity

Who We Are:

Experts in data intelligence, data management, and high scale data platforms.

What We Do:

- Data Architecture
- Enterprise Data Strategy
- Data Governance
- Master Data Management
- Cloud Migration
- Cloud Security
- Managed Services
- Cloud Operations & Automation
- Digital Transformation

TRUSTED: 150+ successful projects across 13 different industries

EXPERIENCED: 20+ years data consulting experience; full-service partner in data management, data governance and cloud engineering

RECOGNIZED: Identified by Gartner as 1 of the 18 major MDM External Services Providers in the latest MDM Market Guides and achieve consistent high ratings on Peer Insights

VALUED: Attaches great value to long term relationships

FLEXIBLE: Large enough to deliver – yet small enough to go fast

OUTCOME: Oriented for both strategy and implementation execution

Let's Talk

- info@d3clarity.com
- D3Clarity.com/podcasts
- 512-790-3282

**Check out our
Whitepaper hosted by
DATAVERSITY!**

WHITE PAPER

The Future of Data-Driven
Decision Making: Integrating
Machine Learning and Data
Governance



The leader in data integrity

Our software, data enrichment products and strategic services deliver accuracy, consistency, and context in your data, powering confident decisions.

12,000

customers

99

of the Fortune 100

100

countries

2,500

employees

Brands you trust, trust us

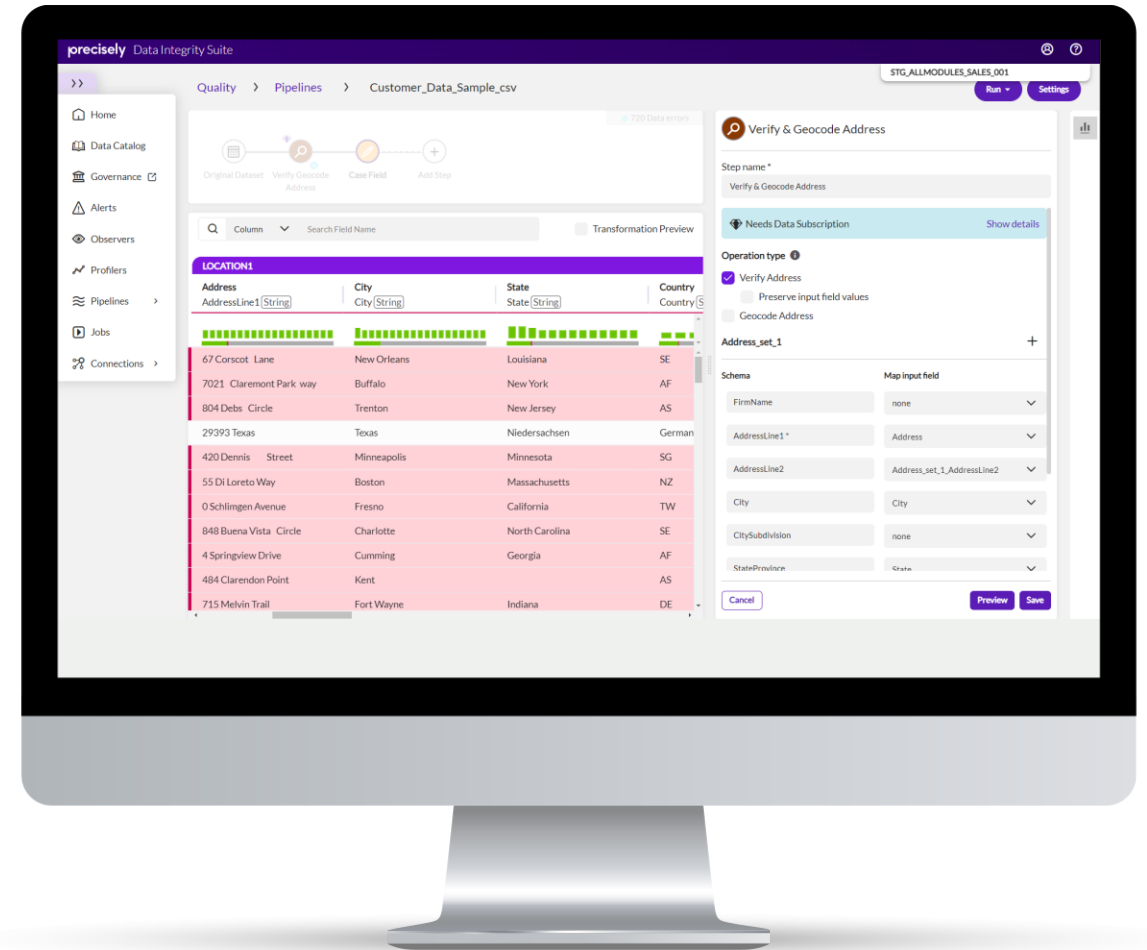


Data leaders partner with us



Prepare for the Journey

- Flexible, interoperable SaaS services
- Runs where data lives - on-premises or in the cloud
- Business-friendly user experience with AI-driven suggestions
- Unique in the market in its breadth of capabilities
- Common foundation with shared data catalog connects all capabilities



precisely
Data Integrity Suite



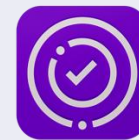
Data Integration



Data Observability



Data Governance



Data Quality



Geo Addressing



Spatial Analytics



Data Enrichment





Thank you for your time.

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Dave Wilkinson
CTO
+1 (512) 751-7242
dave.wilkinson@d3clarity.com
www.d3clarity.com

Rochelle Grubbs
Senior Director, Solution Architect
rgrubbs@precisely.com
www.precisely.com