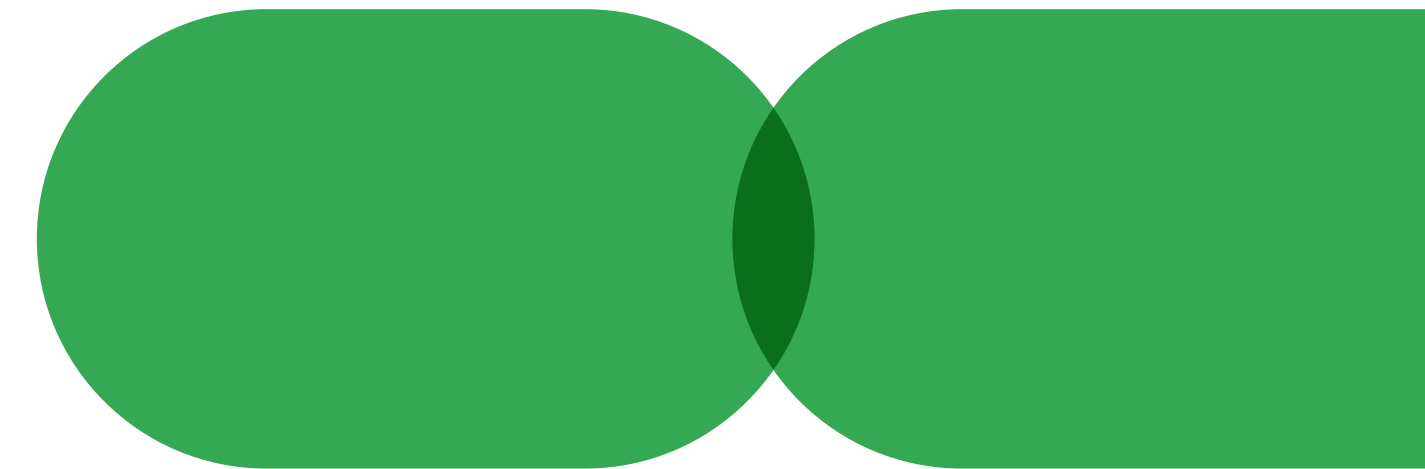




Turn your
data
from liability
to asset

How to build proactive data
governance in the AI era

Google Cloud

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Introduction

Your guide to a data governance strategy to maximize the value of your data

Data can be a liability. It costs to store it. It costs to safeguard it. And with the average financial toll of a data breach estimated at **\$4.35 million**,¹ it costs even more to lose control of it.

But data is also your organization's strongest asset – no matter the size of your organization or which industry you are in. Data is the key to discovering insights, informing great customer experiences, and driving innovation.

Data governance is a principled approach to managing data during its life cycle – from acquisition to use to disposal. **A durable data governance framework unlocks your data asset.**

From processes that unify your data across disparate architectures to policies that enable employees to access information when needed, data governance enables your organization to extract long-term ROI from your data and implement AI transformation.

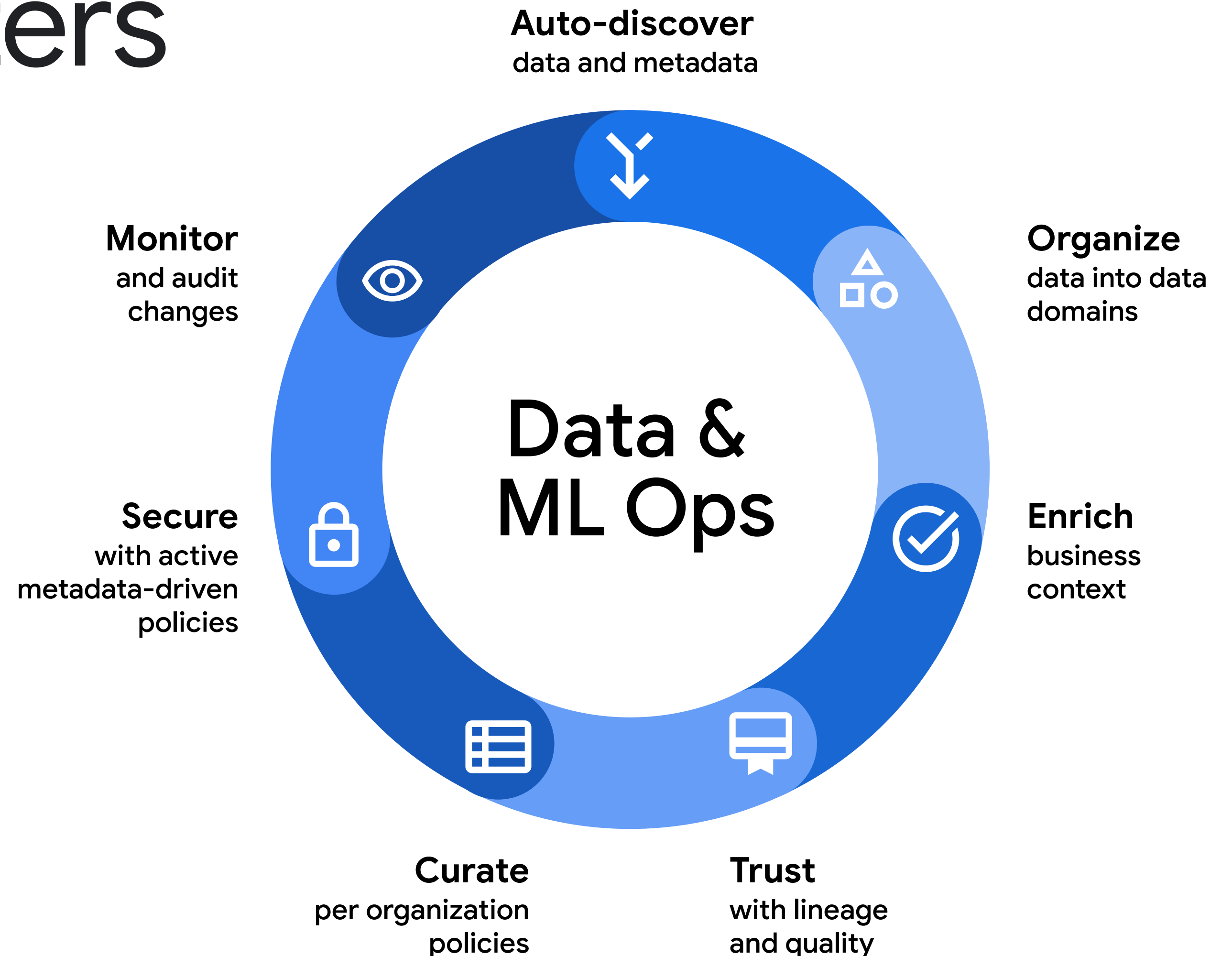
To maximize your data asset, your organization requires proactive and automated data governance with built-in data intelligence.

Why data governance matters in the era of AI

Organizations have more data than ever before. And keeping it secure and compliant – while extracting valuable insights – is an increasingly complex task.

Data governance is a set of processes and policies that ensure effective data management within an enterprise organization. And automated, AI-driven data governance is the key to tackling today's data quality, democratization, and compliance challenges at scale. Organizations that don't take advantage will soon be left behind.

[Learn more about data governance →](#)





By 2030, companies that fully absorb AI could double their cash flow, while companies that don't could see a 20% decline.²



Organizations need to democratize data while enabling domain-specific and corporate-level governance. Tools with built-in data intelligence enable organizations to achieve end-to-end visibility and management of their data. From there, automated tools and policies can grant access to relevant insights to employees across the organization while ensuring compliance with rapidly changing regulations.

While data governance is commonly perceived as safeguarding data, it's also key to helping organizations build what's next. Quality data drives business intelligence and informs technologies such as generative AI and large language models (LLMs). A proactive data governance practice puts data at the core of your business – and powers innovation.

This guide shows you how to build a future-proof data governance strategy that supports data throughout its life cycle, using automated principles, practices, and technologies.

We'll show you three ways to get started.

Manage your data at scale.

With a proactive data governance strategy, your organization can:

- ✓ **Ensure data quality.**
- ✓ **Make trusted data easily discoverable.**
- ✓ **Provide insights into data origination and lineage.**
- ✓ **Securely govern data sharing – internally and externally.**
- ✓ **Meet regulatory requirements.**

Three ways to achieve more proactive data governance

1 Prioritize data quality to drive ROI.





Data is valuable if you use it well.

Achieving ROI from your organization's data relies on trusted, quality data enabling you to drive real-time decisions, power effective AI models, and discover opportunities for better customer experiences.

So you can:

- Build trust in your data.
- Empower data-driven decisions.
- Improve AI performance.

By 2025,

Global data creation is projected to reach more than 180 zettabytes.³

(1 zettabyte = 1 trillion gigabytes)



Build trust in your data.

With rising volumes of data spread across silos, it can be challenging for organizations to achieve an end-to-end view of their data.

The more data you collect and analyze, the more security and governance matter.

But when organizations comprehensively understand data quality, they can trust their data. So that when users find the data they're looking for, they're assured that it's up-to-date, accurate, and complete.

Using automated monitoring of how data moves through your systems (data lineage), data observability tools can detect and repair data anomalies. If there's a spike or drop in the data, these tools help you determine whether the data is complete or missing a record. And if there is a data issue, producers or data engineers can be alerted as it happens.

Empower data-driven decisions.

Data quality is the foundation of the business intelligence (BI) that enables your organization to deliver high-value user experiences.

Business intelligence can uncover critical patterns and trends in nearly every area of your organization – including sales, customer service, production, security, and more.

Real-time analysis enables organizations to discover actionable insights that improve short and long-term performance, driving ROI organization-wide.



Data powers real-time targeted recommendations in retail to deliver a personalized online shopping experience. And provides faster access to applications to reduce latency in online transactions.



Improve AI performance.

Trust (or lack thereof) in AI development is a leading barrier to adoption. While there are numerous considerations for building [more trusted AI models](#), data quality is foundational. For example, if training data contains unfair biases, these biases will also be reflected in the model. In cases where AI systems make decisions that significantly impact individuals – such as loan approvals, student grades, or employee hiring decisions – organizations that curate their training data must be accountable for these AI systems' decisions and prevent illegal discrimination.

Data quality is a prerequisite to creating responsible AI models. And data governance practices are how organizations ensure their data adheres to quality standards and can be trusted.

The reliability of your data is the groundwork for AI innovation. While complete considerations for AI models is outside the scope of this paper, here are some thought starters:



Generative AI foundation models come pre-trained on large corpora of data. When deploying gen AI, you trust that the foundation model is unbiased. Because of this, it's wise to find a provider that offers you indemnity for any claims related to the training data of the model you use.



Quality AI models rely on more than just training data. It's important to [ground your models](#) with data at the core. Embeddings make use of semantic relationships between your data, so that your model delivers accurate answers, not just the probabilistic answers that are typical output of an LLM.



Human intelligence plays a key role in monitoring AI systems for bias – while a comprehensive data governance approach ensures trustworthy data is the foundation for AI training.

How industries are empowering data-driven decisions



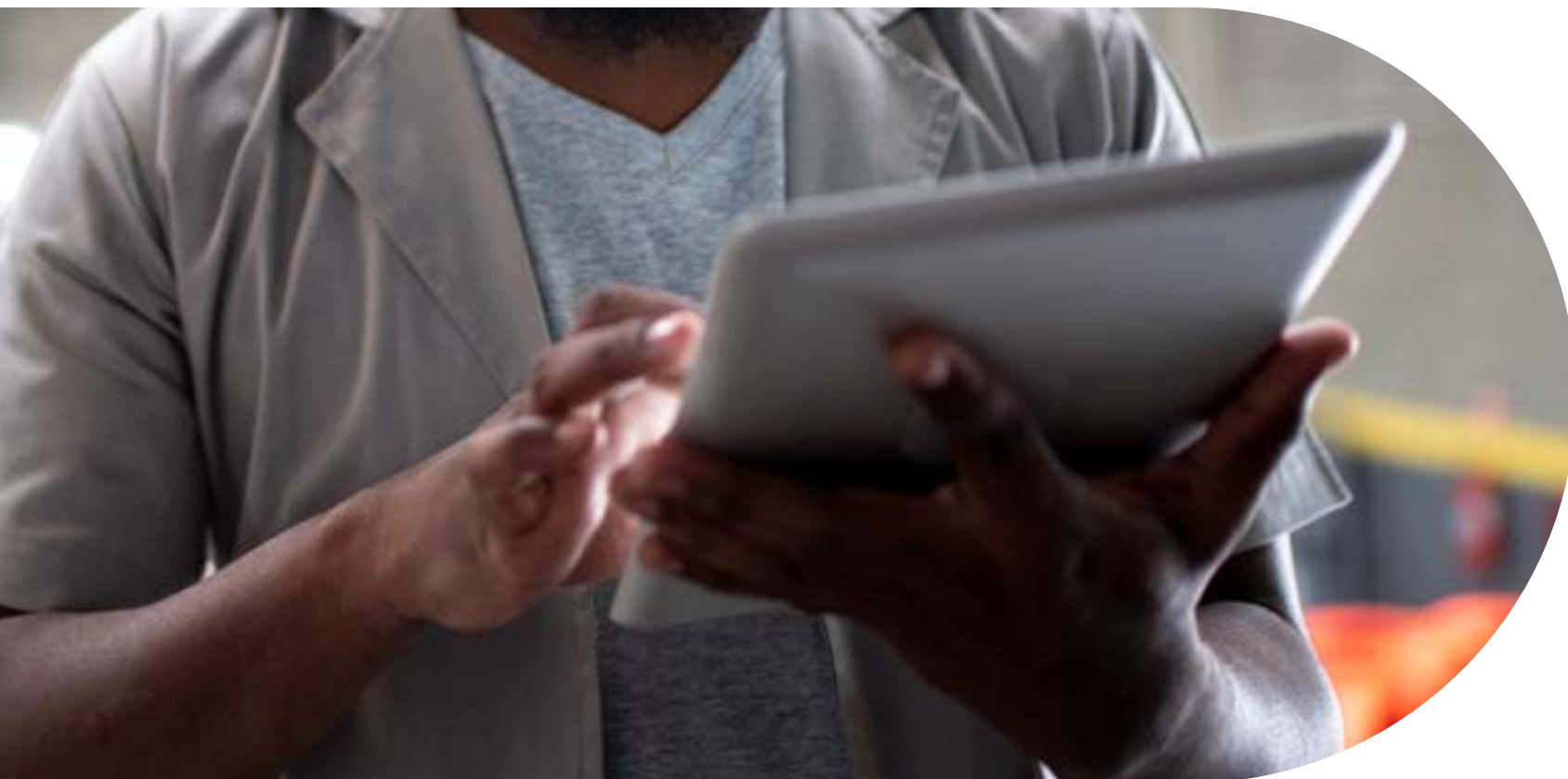
Financial services

[Macquarie Bank](#) brings hyper-personalized services to its retail banking customers, including auto categorization that gives customers a holistic view of their transactions and expenses so they can manage their finances more effectively.



Healthcare

[Johns Hopkins University BIOS Division](#) has achieved faster and more accurate decision-making for brain injury patients, lowering the time to evaluate 500 scans from 2,500 hours to 90 minutes – and reducing research and infrastructure costs by 50%.



Next steps

When assessing the quality of their data, many organizations initially struggle with questions such as:

- Is the data extracted from an authoritative source?
- When was this data last refreshed?
- How is sensitive information being moved or copied? Is it in adherence to data governance practices?

Organizations can improve data quality through **data observability** – by monitoring their data and proactively addressing any issues:

- Implement [data lineage tools](#) to track how data is sourced and transformed, including sensitive data.
- Put granular and broader checks in place for an ecosystem-wide view, delivering the right alerts and reports.
- When data is flagged, quarantine that data and take action to fix it before it's a problem.

These proactive practices ensure that when your users access data, it can be trusted. This level of trust is foundational for BI insights and data democratization that drive ROI.

Three ways to achieve more proactive data governance

2 Turn non-technical users into data-driven decision makers.





Data teams are a common bottleneck. Data democratization – giving people access to insights and the know-how they need to work with data proficiently – can relieve the pressure.

However, many organizations need help maintaining consistent governance while enabling self-service of data.

They need a framework that provides high risk and cost mitigation while providing broad access to data that teams need. Secure self-access tools and processes backed by strong data governance policies are the keys to resolving the tension between access and security.

So you can:

- Unleash insights.
- Securely automate self-service to data.
- Increase innovation.

69%

of data professionals spend an average of 6–10 hours per week responding to, managing, and resolving data access issues. That's 24–40 hours a month, or 288–480 hours a year.⁴



Unleash insights.

Business intelligence doesn't come from simply making data accessible in big and unstructured data. The democratization of **insights** (the meaning and implications of the data) leads to value generation.

Imagine a renewals manager reviewing a customer's profile in your CRM before an important call. With access to data about that customer, the employee can glance through data tables to see information about how the customer uses your software platform and try to glean something useful. By contrast, with access to insights about that account, the renewals manager could instantly see that the customer has continually hit their usage limit and is a likely upsell candidate for more seats.

AI-powered, embedded analytics tools give people access to the insights they need when they need them. And with the right integrations, employees can access these analytics in the workflows they're accustomed to – even outside your BI platform.

Analytics shouldn't be limited to technical users or data engineers. Today's low-code tools empower employees who need more technical skills to access insights. In the near future, natural language processing and gen AI will be the gold standard for real-time search capabilities.

Learn more about building
a data-driven culture



Securely automate self-service.

Data is critical to understanding your organization's customers, market, and competitors – with self-service unlocking increased potential for insights. However, without the right security controls, self-service can present increased risk.

Automated processes can keep your customers' data secure and compliant, while granting autonomy to the user closest to certain data types.

Domain-based architectures empower individual business teams to own a specific use case or data set. A strong data governance framework gives these teams access to and governance of that data – while keeping the umbrella set of compliance controls in place.

96%

of digital leaders had C-suite executives that empowered teams to generate ideas and own decisions, while 73% of laggards had leadership predicated on following instructions.⁵

Increase innovation.

Modern organizations are data-driven. Not just to enable better customer experiences and outcomes, but to reimagine their organizations for what comes next.

When it comes to innovating in a rapidly changing world, collaboration is a key factor that sets leading organizations apart.⁶

Data democratization breaks down organizational silos and enables a larger pool of employees to use data to solve problems and develop new ideas. And with lower barriers to collaborating, sharing, and benefiting from each others' work, employees can collaboratively drive a bigger impact.

69%

of employees bypassed their organization's cybersecurity guidance in the past 12 months. 74% of employees said they would bypass cybersecurity guidance if it helped them or their team achieve a business objective.⁶



How data democratization is changing the game

Imagine shortening the development time of custom reports from weeks to days, and freeing up significant engineering resources in the process. That's the power of democratization, and while it's the future for many companies, [Subskribe](#) is already there.

Subskribe provides a unified quote-to-revenue platform for modern SaaS platforms, helping them improve decision-making and drive growth with on-demand insights. Previously, onboarding a new SaaS customer required weeks of engineering effort to develop custom reports. By integrating Looker Embedded, non-technical teams can now develop

sophisticated reports without code, freeing engineering up for innovation opportunities. But that's just the beginning.

Subskribe is now building an embedded analytics solution with Looker that will enable customers to create their own dashboards and reports. And expanded personalization options will serve up trusted analytics that are tailored for user roles such as executives, finance staff, and client success teams – driving product adoption and customer success.



We designed our semantic model so that, in just a matter of hours, anyone can use Looker to build their own dashboards and reports with the data they're authorized to see.”

Ugurcan Aktepe
Software Engineer, Subskribe



Next steps



Data democratization means building an organization-wide culture and processes that sustainably supports self-service access to data that is compliant and secure.”

Prajakta Damle

Director of Product Management,
Google Cloud

Collaboration is key to spurring innovation. And traditional barriers to collaboration – dispersed teams and siloed information – are dissolving in a connected and democratized modern workplace.

However, security remains an essential concern. Employees shouldn’t have to worry about who has access to what information when collaborating. Organizations can fuel collaboration by using automated processes and tools to ensure it’s secure, by design.

97%

of industry leaders say democratizing access to data and analytics across the organization is important to business success.⁷

A data democratization framework with security built-in:

- Protects data at every step (with policies for how data is accessed, managed, and retained).
- Maintains visibility into each data action (using data logs and lineage tools).
- Makes it easy for users to do the right thing (with automatic protections and tools that help employees share information securely).

[Embedded analytics in Looker](#) meets users where they are in skills, requirements, and preferences.

Learn more in this Google Cloud webinar →

Three ways to achieve more proactive data governance

3 Rise above architecture.





As data regulations increase globally, organizations are also grappling to protect more complex architectures and data access needs.

With many enterprises working in hybrid – across on-premises and cloud – or multiple clouds, it's clear that compliance can no longer be restricted to individual architectures.

Compliance requires a proactive, end-to-end strategy with umbrella policies indifferent to infrastructure.

So you can:

- Easily adapt to regulatory updates.
- Achieve compliance across architectures.
- Unify your data with a metadata lens.

Countries are introducing data regulations rapidly, leaving companies struggling to remain compliant.⁸

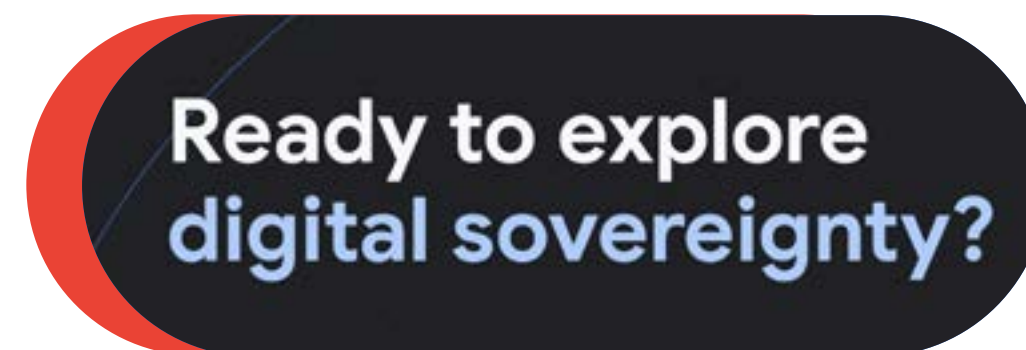
Easily adapt to regulatory updates.

Data regulations are increasing in scope – across geographies and industries. Once the realm of data-intensive industries, today even small companies are bound to government privacy and security regulations that keep customer data secure.

When compliance is an add-on (reactive), each new regulation complicates your data governance framework. But when compliance is built-in (proactive) and based on business-driven processes, your organization remains end-to-end compliant – and can manage regulatory updates with ease.



The [Cloud Data Management Capabilities](#) (CDMC) framework defines the key controls required to protect data in cloud environments and meet data privacy requirements around the world.



Google Cloud's [Digital Sovereignty Explorer](#) is an online tool that takes individuals through a series of questions about their organization's digital sovereignty requirements.

Achieve compliance across architectures.

Many organizations operate across multiple clouds and architectures to provide critical services – and protect sensitive information. Extensibility enables your organization to remain secure and compliant. And open source enables integration with partners that can provide extensibility, end-to-end.

[Open source improves extensibility.](#)

Proprietary software is plagued with interoperability issues and presents survivability challenges. Solutions based on open source

tools and open standards are easier to integrate, alleviate a significant portion of development cost, and give organizations the flexibility to deploy – and, if necessary, migrate – critical workloads across or even off public cloud platforms. Having tools that connect across architectures is key to gathering functional insights while remaining compliant.

99%

of companies are using open source and 35% of all enterprise software is based on open source code.¹¹ 2022 saw the most downloads of open source data ever.¹²

Data that is collected but not used is called [‘dark data’](#). This term includes undiscovered data, underutilized data, and private identifying information (PII) that is improperly categorized.

66%

of organizations reported that at least half of their data is dark,⁹ posing significant risk.

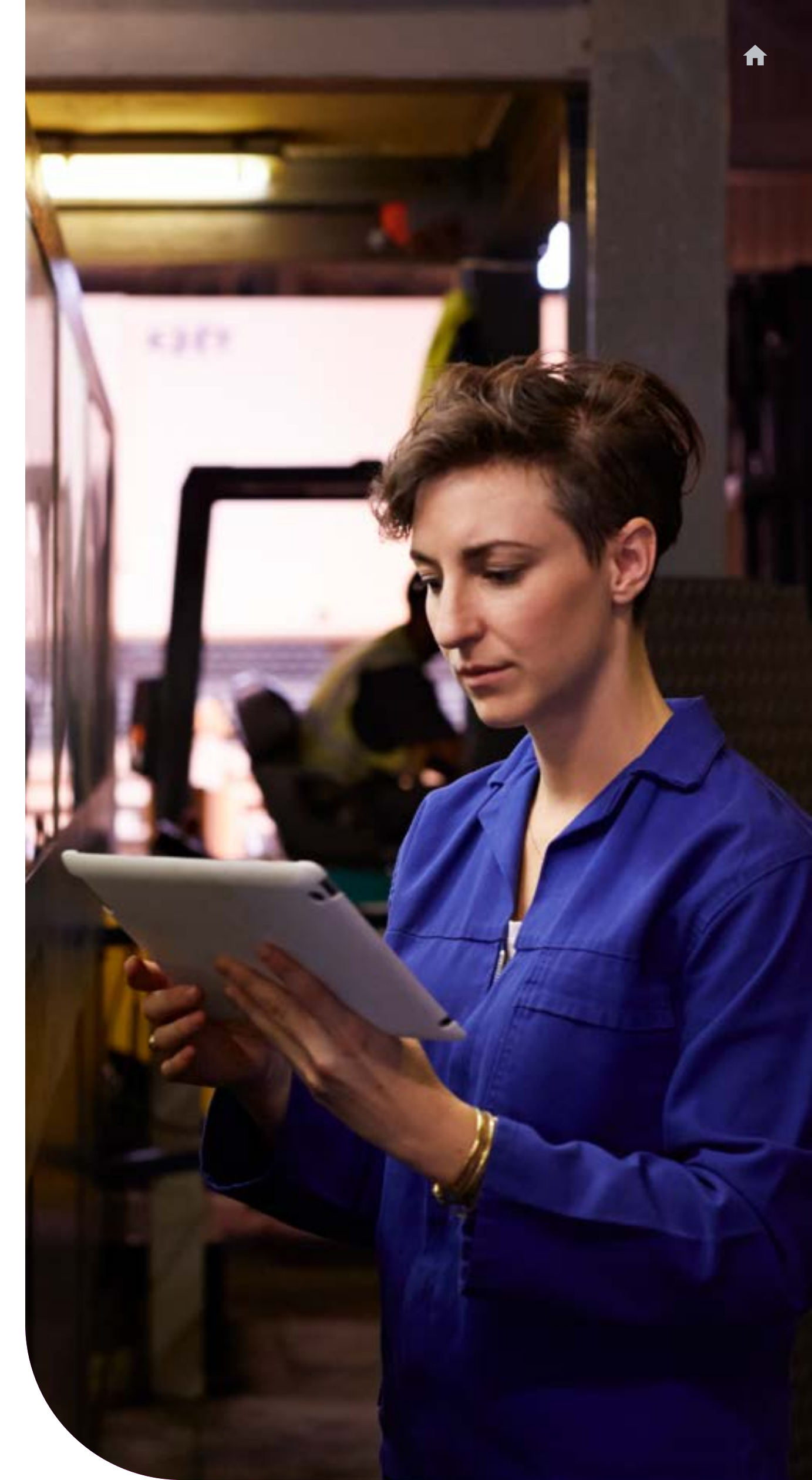
Unify your data with a metadata lens.

Data is key. But first, your organization needs to know where it is. AI-driven metadata tagging enables organizations to discover and harness structured and unstructured data, while improving their understanding of data lineage.

Traditionally, analytics were optimized for data warehouses – structured architectures that required the data to be extracted, transformed, and loaded into a specific format. Organizations can now take advantage of less rigid architectures, but without end-to-end

discoverability, dark data is a looming liability. Automation is key to properly tag, store, and dispose of data to adhere to data sovereignty regulations and data democratization compliance.

Implementing your metadata tagging and annotation strategy requires more than just technology. Automation can discover well-known data sets, but the specific business context is still something the organization needs to know and define, and make part of its data governance strategy.





Google Cloud supports retention policies across a portfolio. So that when the time comes, Google Cloud will move data or delete it – including the log that indicates what has happened.

How automation delivers results



[Deutsche Bank](#) unlocked a key driver for accelerating transformation by automating controls.



[Achievers](#), with over 3.6 million users across 190 countries, have maintained their data quality while rapidly growing to provide data trust across the organization, saving hundreds of hours across the team.

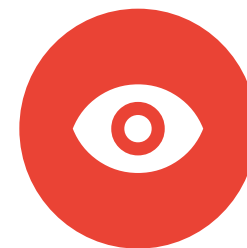


[Casa Dos Ventos](#) went from frequent “data firefighting” to automatic data quality checks that build trust in their data, provide the context needed to set the right efficiency goals, and help them invest wisely in the Brazilian renewable energy market.

Next steps

Data governance informs the management of the entire life cycle of your data, including its disposal. Many jurisdictions require that personal information be destroyed after a set amount of time. However, the patchwork of regulations and the fragmented nature of organizations' data can make compliance technically challenging.²

Here are 3 steps to ensure your organization remains compliant:



Discover your data.

With more data than ever before, it's important to not only know where data is located, but identify whether it is sensitive information that is subject to stricter security and compliance policies. This visibility requires end-to-end discoverability and lineage tools.



Annotate.

Classify your data using your business context to create meaningful business domains. Your data governance strategy can then follow from the lens of how you see your business and not how you see the infrastructure.



Apply automated governance policies.

Express your governance intent based on your annotations and apply those policies at scale across distributed data to secure and govern your data and ensure compliance to different regulations. Defining these policies based on your business context and automating these policies ensures your data is accessed securely, purged when required, and also retains audit logging to report to regulators.

**Banish dark,
duplicate, and
dirty data to
maximize ROI.**





Your organization is collecting data at levels like never before.

You have the potential to leverage this asset to become a data-driven organization that delivers exceptional customer experiences and innovates for what's next.

But too often, data is a liability. Dark data. Duplicate data. Dirty data. All can cause havoc and prevent your organization from realizing your data's potential.

A comprehensive data governance strategy removes the roadblocks to being data-driven. By ensuring data quality, data security, and data compliance, your organization can unlock its potential.



“Unstructured data from chat applications or log files can cause significant headaches for organizations, especially if they unexpectedly contain sensitive data like PII. An example of this is customer support transcripts, because you never know what information people will submit.”

When someone chats with customer support, they could type, ‘I didn’t get my medications. Here’s my name, the medications I need, and my social security number.’ That sensitive PII data is now in one of your databases which may not be appropriately secured and classified.”

Anton Chuvakin, Senior Staff Security Consultant,
Google Cloud ([Data & AI Trends](#))



Modern organizations are embracing proactive, AI-driven, built-in approaches to data governance – where employees can access the insights they need, customer data is kept secure, and the organization is set to embrace the AI transformation.

The data is already yours. Discover it. Democratize it. Harness it.

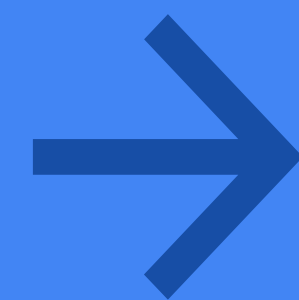
Ready to turn your data from liability to asset?

We've covered how organizations make the most of their data in the AI era, including how to:

- Break down data silos.
- Improve AI performance.
- Build trust in their data.
- Democratize access to insights.
- Improve collaboration and innovation.
- Ensure compliance across architectures.



To learn more about how Google Cloud can help you, get in touch.



Talk to an expert.

cloud.google.com/contact

Endnotes

- 1 [Cost of a data breach report](#) (2023) IBM.
- 2 [The consumer-data opportunity and the privacy imperative](#) (2020) McKinsey.
- 4 [2023 State of Data Engineering Survey](#) (2023) Immuta.
- 5 [Gartner Predicts Nearly Half of Cybersecurity Leaders Will Change Jobs by 2025](#) (2023) Gartner.
- 6 [The Keys to Scaling Digital Value](#) (2022) Boston Consulting Group, sponsored by Google.
- 7 [Turning Data into Unmatched Business Value](#) (2023) Harvard Business Review, sponsored by Google.
- 8 [This is what increasing data protection laws mean for your company](#) (2023) World Economic Forum.
- 9 [Don't Let Data \(In\)Visibility Limit Your Digitization Dreams](#) (2022) Gartner.
- 10 [The consumer-data opportunity and the privacy imperative](#) (2020) McKinsey.
- 11 [How leading organizations are making open source their super power](#) (2022) Google Next '22.
- 12 [State of the Software Supply Chain](#) (2023) Sonatype.