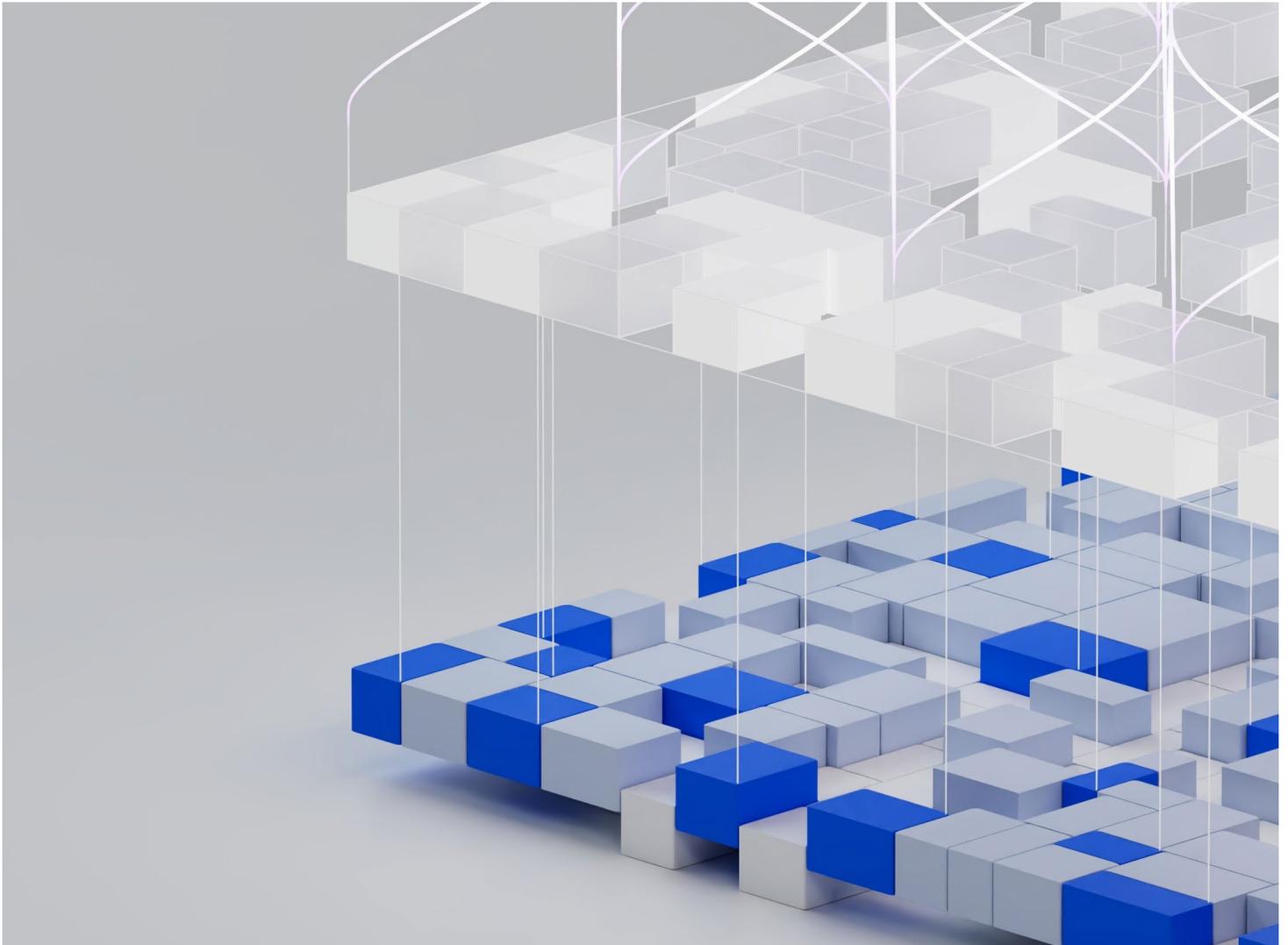


From The Data Differentiator,
a guide for data leaders

Design your data strategy

A six step guide to creating
a data-driven organization



Drive business results with data

Data is more pervasive than ever but taking advantage of its full potential requires creativity and conviction.

As a data leader, you navigate through an ever-growing pool of internal and external data sources to shape strategy and direction in an increasingly competitive, data-rich marketplace.

Gone are the days of focusing only on business intelligence. Today's data leaders strive for real-time decisioning and predictive models that help keep the organization ahead. But to get there, your data strategy must define the right approach to make sense of vast amounts of data, align to business strategy and build solutions that span the entire organization. You've got to empower people and define use cases that meet business needs, from traditional analytics and data science to operational analytics, digital, IoT sensor data and new product development.

Creativity and innovative decision-making are table stakes for success. But fully realizing data's potential also requires vision, persuasion and support. The six-step framework—infused with insights from industry data leaders—will help you design and implement your data strategy while making the most of your teams, talents and strengths as an organization. See next page for the six step framework.

“When management hires a CDO, they think everything is going to change in six months, eight months. Complete automation by machine learning! An entirely data-driven organization! That's not possible. But stay resilient.”

Srinivasan Sankar

Enterprise Data and Analytics Leader
Insurance Industry

Six steps to creating a data-driven organization, from ideation to execution



01. Understand your business objectives

Connect your data strategy with the business strategy

With a data strategy, buy-in matters. Your data strategy framework functions only when that vision is managed, supported and monetized in tandem with the overall goals of the organization.

To align business and data priorities, you need a clear understanding of the larger aims of the organization and senior leadership. Meeting with C-suite and business stakeholders is the first step in helping your organization reach its objectives and embrace data as a true competitive advantage. “It really all starts and ends with, what business problem are you trying to tackle?” says Dr. Rania Khalaf, Chief Information and Data Officer at Inari.

To help leadership see the strategic merits of data, make sure priorities are clarified and agreed upon as your collaborative, data-driven environment begins to take shape.

Above all, be realistic, says Srinivasan Sankar, Enterprise Data and Analytics Leader in the insurance industry.

Identify the most compelling use cases

If you had better access to quality data, where in your organization could you solve problems? That discovery process requires a broad review. “As you meet with stakeholders, identify data needs across multiple business objectives within or across lines of business to show the value of data as a strategic asset,” says Jo Ramos, who specializes in designing and implementing data strategies for IBM clients.

By better understanding how data flows (or doesn't) between areas of the organization like finance, sales and marketing, you get a more holistic view of operations and find new ways to reduce costs, create efficiencies and increase revenue.

Know your options, too. What if you could lower supply chain costs by updating antiquated apps? Or maybe you could automate risk and compliance with AI for faster and improved insights? Scan the data landscape in every direction for opportunities to grow your top line, expand your bottom line and reduce your risk.

Know the tools in your toolkit

Work hand in hand with IT. They'll help you take your data strategy to the next level by leveraging pre-existing infrastructure and technologies as well as new and leading-edge technologies. Understanding your organization's current tech ecosystem and strategies (and sub- and sub-sub-strategies, too) helps you plot a definitive and achievable course of action for using data, AI and applications to help achieve business outcomes. That knowledge is crucial because taking advantage of planned and funded initiatives helps ensure you can deliver on your data strategy.

Familiarize yourself with your organization's digital transformation strategy

Ramos points out that updating applications and innovating old systems cannot work without first considering your company's current data environment. “A lot of organizations are talking about application modernization and bringing apps to the cloud, but they're losing sight of the data itself,” he says. “When it comes to integrating data and doing analytics, it's not about moving all the applications to the cloud, it's figuring out how the data is going to live in new modern architecture.”

Questions to ask each stakeholder

Here's a checklist of questions for that first round of important conversations to map out your direction.

 What are your top business priorities and initiatives that require data and AI use?

 What data privacy and security challenges do you have related to self-service data access?

 What do you wish you could use data for that you can't quite hack right now?

 How much time do you spend integrating tools in order to build solutions?

 What are the biggest challenges preventing you from achieving those priorities?

 How do you measure success for yourself and your teams?

02. Assess your current state

Surface and dissect pain points to discover blockers and gaps

Now that you know the end goals and have leaders on board for the next step (you do have them on board, right?), it's time to look holistically across your ecosystem for data shortfalls and vulnerabilities. What's working and what's not? What are the barriers to getting your business up and running with a true data-first experience?

Organizational issues often underlie challenges with data integration, data management and workflows. In fact, 82% of enterprises are inhibited by data silos.¹ To work best, employees need self-service data access with the right controls in place. Simply having access should never be the blocker.

"If I'm a business owner and want to use data to run an application, I shouldn't even have to think about where the data is coming from or the metadata behind it or the rules around compliance," says Priya Krishnan, IBM's product leader for data and AI. "I should just be able to reach for it and turn that data into great outcomes."

A design-thinking approach helps surface and detect organizational pain points, bringing strategic value across multiple use cases, lines of business or teams.

Design thinking for data strategy

Design thinking lets you better understand the present and envision the future using real observations, not guesswork. By seeing problems and solutions as an ongoing conversation, the process helps generate attainable fixes in a continuous cycle of observing, reflecting and making. Learn more with [IBM's design thinking resources](#).

Examine data to uncover what you have and what you need

A data topology reveals the curves and contours of information much the way a topographic map shows mountains, hills and valleys. Data topologies classify, cluster and manage data scenarios that embrace the competing priorities and needs of any organization. By understanding your data topology you can identify constraints. Capturing your existing data topology helps to pinpoint outdated data architecture, such as technologies that don't align with business strategy, along with areas for logical upgrades, opportunities to leverage more robust and capable technologies, and red flags that hamper data integration.

Take inventory to know who's on board and what they bring

No matter how brilliant and talented you are, you can't engineer massive data changes on your own. Make sure your team—and, yes, that includes you—has the specific skills and ongoing training needed to keep up with the rapid pace of the IT industry. More than half of organizations are upskilling internal staff to expand their data literacy and expertise, while one in five are hiring graduates and training them.² Get smart, stay smart.

Prioritize critical data elements for governance

Keeping a handle on critical and regulated data elements—such as names, addresses, gender and social security numbers—is essential to running various business systems without duplication errors, unreliable searches or privacy breaches. Strike a delicate balance between securing data and fostering innovation. Consider who currently owns, manages and defines policies related to data, and whether that governance affects security, privacy or compliance. Make sure the right people within your organization have the decision rights, accountability framework and external resources to ensure the appropriate behavior in the valuation, creation, consumption and control of data and analytics. Don't forget governance of any AI technologies you're using at this stage, either.

[To learn more, check out IBM's course on data topology →](#)

"When it comes to integrating data and doing analytics, it's not about moving all the applications to the cloud; it's figuring out how the data is going to live in new modern architecture."

Jo Ramos

Chief Architect
Data Fabric Solutions
IBM

03. Map out a data strategy

Define your data's target state

Your target state, operating model and implementation blueprint will help you ideate, improve and evolve your data strategy. As a data leader, you are not simply a technology advisor or data scientist but rather a champion and evangelist for building a data-driven company. Your comprehensive vision should be outlined so that data strategy conversations, and the resulting business process changes, are as meaningful to app engineers and business analysts as to HR and sales.

“Many data environments are now dated and rarely have the flexibility to evolve in today’s digital environment,” says Tony Giordano, who leads data strategy, consulting and transformation engagements for IBM.

“But digital requires real-time decisioning capabilities, and the predictive models that provide these real-time decisioning capabilities require data science environments. Increasingly, operational data is now a critical part of your data ecosystem. So, a modern data architecture requires an integrated data ecosystem with capabilities that need to be managed, governed, and secured to ensure consistent data quality and the flexibility to evolve as the digital channels evolve.”

This level of detail makes changing business processes a little less grueling, because you’re ready to meet data concerns with a detailed explanation as to what, where, why, and how this will make a particular user’s life easier. And that’s a big deal—37% of respondents in a recent survey said data security was their number one challenge, followed by data privacy concerns and managing data pipelines.³ A data strategy blueprint, future state target operating model, and implementation roadmap empower your team to navigate challenges using a clear data management approach.

Be specific about where application modernization, automation and AI can take your strategy to the next level

The more you learn from your digital transformation and IT strategy, the more your data strategy comes to life. Such insights help drive efficiency, increase revenue growth and mitigate risk, especially when amplified using app modernization, automation and AI.

Lufthansa worked with an IBM team to pilot new AI-based business ideas and services that enhanced customer experience. Previously disparate data sources are now searchable in natural language and aviation terms to more easily address close to 100,000 customer queries annually. “For Lufthansa, AI is so critical because it actually opens up the world of the data that we’re sitting on,” says Mirco Bharpalania, Senior Director, Cross Domain Solutions at Lufthansa Group. “It actually helps us to unlock all the potential that we somehow or somewhere in our databases already have.”

Understanding your key assets



Target blueprint

How you’ll architect the technology solution



Target operating model

How the new solution will work operationally



Implementation roadmap

How you get to the target blueprint and operating model in a step-by-step process

Measure progress toward your goals

We understand what you're up against. As a data leader, you're often expected to deliver and quantify major results on three competing fronts: revenue growth, operational efficiency, and mitigating security and privacy risks. Use data for the win. Move from offense to defense and contribute directly to the growth of the company. Establishing metrics of success lets you focus on priorities based on what matters most in this moment for your organization.

Remember: Short- and long-term objectives should show how data can help your company achieve measurable outcomes. Look back on your notes from those initial meetings with stakeholders to see how they defined key performance indicators and goals—and see how those stack up with your present data platform and AI strategy. Are your metrics delivering on the bold plans you laid out at the time? If not, it's time to reconnect and realign. If you're blowing past predictions, well, skip ahead to the next step.

"The CDO role is often very short-lived. The reason is not setting expectations. Make sure you set those expectations and deliver outcomes as you go," Sankar says.

Capture your data strategy highlights—and share them

At this point, you should be crystal clear on your organization's priorities and how to use data and AI to deliver and accelerate business value. What are your next gaps to close? A look at the big picture—where you are and what's ahead—gives you strategic context to make actionable plans for delivery and scale. As you do, include the outcomes, objectives and measures that will keep you on track so you can share them with your enterprise as the journey unfolds. Here's some of what to include in your data strategy overview:

- Observations, challenges and recommendations
- Objectives, outcomes and measures
- Cross-functional data needs to support multiple use cases
- Data privacy and security needs
- Data topology, data organizations and pipelines
- Reference architecture and supporting technology
- Conceptual future-state data topology
- Action plan for selected starting area

Remember: strategy is not just a paper exercise—it is a living and evolving approach. Review and iterate frequently, based on changing business objectives and goals and always ensure that your strategy allows for flexibility, agility and human innovation. This is a creative opportunity.

04. Establish controls

Map—and navigate—real-world scenarios

Whether it means innovating tired systems, jettisoning old products, delegating to data-savvy partners or applying artificial intelligence across the business spectrum, your task is to focus on your data objectives with as little sidetracking as possible. In the end, it's about speeding insight to speed value. You have your insights from your data users. Consider the best ways to put that information to work. Implementing the data topology you created in the strategy phase sets your information in motion across multiple lines of business, helping you keep tabs on use cases and monitor various controls for each.

Outline a data governance policy based on quality, privacy and security

As part of a modern data management approach, a robust governance and privacy capability helps organizations thrive in a world where data can be overwhelming. A metadata and governance layer for all data, analytics and AI initiatives increases visibility and collaboration across your organization, regardless of where data resides. Your data governance policy will shape behavior around data quality, privacy, security and management, and show where AI is streamlining those regulation efforts. Whatever policy you're enforcing should standardize terminology for both structured and unstructured data so everyone in the organization can speak the same language, whether that data is centered on clients, products, the workforce or financials. All of it should be backed by apps designated for specific environments, aligned with security and regulatory requirements, and platformed in a hybrid multicloud approach to ensure optimal protection.

Data integration is critical to making the most of the data you have. ING Chief Architect Ferd Scheepers wondered how the global financial institution could better govern data moving between different countries and onto the cloud. IBM teamed up with ING to deliver a data management solution in the form of a data fabric architecture to create an abstraction layer between the data and ING customers. This way, information could be consumed anywhere and automatically across an open, hybrid cloud environment that adapts to ING's multiplatform, heterogeneous landscape. "We don't have to know where the data comes from," Scheepers says. "There should just be this layer that makes it possible for us to consume data that is automatically ingested, automatically mapped and has all the policies enforced because we understand what the data is."

Identify your data advocates

The people across your organization who you identify as allies in data strategy and advocacy are your partners for success. Figure out who's most passionate in the organization about the impact data can have on their work and get them involved in regular meetings and maintaining standards. "I kind of started small by identifying product champions," Sankar says. "It would start with one business unit and once that became successful, it's contagious."

Since your strategy has likely made major headway already, think about where else your current and future data partners can help repeat and scale results in new areas. For example, as a data-first enterprise, IBM has a team of data advocates dedicated exclusively to helping the organization adopt better, more pervasive use of data at every level. As Inderpal Bhandari, IBM's Global Chief Data Officer, explains, "These data advocates are fully empowered in the sense that if they find a like-minded group in accounts receivable or supply chain and want to move ahead with data and AI capabilities they don't have to come back for permission or funding—they can just go."

Standardize your nomenclature

By 2024, organizations that make effective use of active metadata will reduce time to integrated data delivery by half and improve the productivity of data teams by 20%.⁴

A robust knowledge catalog lets you access, curate, categorize and share data, knowledge assets and compliance information. In short, it's a way to build a consistent metadata foundation that centralizes relationships around data wherever it resides.

Among much else, a knowledge catalog can give users access to a cross-organizational common glossary tailored to your needs and nomenclature, so everyone is on the same page, quite literally, about governance, data quality and compliance. The goal is operational efficiency.

"I kind of started small by identifying product champions. It would start with one business unit and once that became successful, it's contagious."

Srinivasan Sankar

Enterprise Data and Analytics Leader
Insurance Industry

05. Create integrated solutions

Set your sprint cycles

For a data strategy to take hold, organizations often need to re-engineer their entire culture around new concepts such as hybrid multicloud environments and end-to-end data-management capabilities. That sounds daunting, but it's hardly impossible.

Start by thinking about what you can achieve that's valuable and viable in a short amount of time. Assemble your cross-functional team against clear objectives. Then, set short sprint cycles with actionable milestones that will help prove results. One approach is to follow this simple, repeatable process used by IBM data experts:

- Plan for one to two weeks with discovery workshops and data strategy inclusive of data topology.
- Prove over six weeks with a customer-driven use case set with actionable and learnable milestones.
- Adopt and scale with a test product tracked across internal stakeholders to ensure conversion.

That last part is critical. To promote clear understanding of the benefits of any strategy, make sure the C-suite, tech teams and business users all have the same finish line in their sights.

Collect small wins in the form of MVPs

Sometimes, you get the most from the least amount of investment. The IT team at Experian didn't know there was a place for analytics in their back office; they only knew they were drowning in information. Assembling a single credit report in less than one second requires no less than 3,000 sources of data, 200 million records updating constantly each month, and billions of rows of additional data tracking archived historical data and derived data sets.

Working with IBM, Experian implemented an MVP that lets users contemplate and test new ideas with the least amount of investment and features. In many cases, it's the quickest, cost-effective way to test hypotheses and figure out if continued investment makes sense. In this case it absolutely did. "Within 90 days, we had the proof of concept, the results of which had demonstrated that we could improve our coverage by 500% and lower our costs by 80%," says Joni Rolonaitis, Chief Data Officer at Experian.

Moving beyond silos—and siloed thinking

Integration around emerging technologies and systems is how organizations become more automated, data-driven, risk-tolerant and secure. It's also how businesses today become more profitable. Consider how much employee time is squandered in the face of outdated data ecosystems and management practices that get in the way of optimal data use. Research shows that up to 68% of data isn't analyzed in most organizations.⁵ With head-spinning advances in computing capacity, smarter algorithms and affordable storage, weaving together data is part of the fabric of future-facing businesses.

Create a central catalog to find—and share—insights

You'll want a central catalog to store—and share—insights, allowing for simplified data consumption. Data is augmented in original and curated forms with purpose-fit storage allowing for publication and subscription of data. Data-access tools look beyond individual apps or processes to consider how your data is being consumed and what knowledge is emerging. This level of detail enables you to make real-time decisions for users across lines of business, as well as for analysts, data scientists, and regulatory and federal agencies.

Encourage adoption from all directions by empowering data consumers

This isn't just about being heads down in data. You are pushing the culture of your workplace into the future. By encouraging adoption of your data strategy from all directions—not just top down—you're influencing how your business communicates, improving key workflows, optimizing security and unlocking new market opportunities. But even beyond that, you're disrupting the paradigm in the best possible way. Your new data management framework is accelerating the pace of new business models in a digital transformation that's improving service for everyone, increasing efficiency in operations and creating better experiences for your organization's employees and those they encounter.

06. Scale your team and processes

Communicate results for maximum visibility

Let people know how much your efforts are paying off. “Build credibility with business process and data connection, and by telling a compelling story with your data,” Sankar says. Do that across the enterprise (up, down, sideways, diagonally) with quick updates and regular reports on how your new strategies are driving revenue and making work more enjoyable for everyone. Don’t be shy about sharing performance metrics on how your initiatives and outcomes are making good on those early discussions with senior stakeholders. Measurable results will reinforce your unique value and support your continued campaign to lead the way with data.

Hire (and reskill) talent to stay agile

The talent shortage is real, but most organizations don’t know what to do about it. Closing the skills gap means looking beyond traditional hiring and training strategies. As companies scramble to meet their talent needs, many are making adjustments to their education and experience requirements just to fill roles. What can you do when training and hiring are not enough? Consider these tips from [IBM’s enterprise guide to closing the skills gap](#):

- Acquire talent from outside the organization
- Move talent across business units and divisions
- Reskill employees based on business priorities
- Leverage apprenticeship/internship programs to train talent
- Leverage new and emerging educational programs/platforms to enhance employee skills
- Apply analytics to analyze and predict skill supply and demand
- Implement skill recognition initiatives to recognize and track skills progression

80%

Gartner expects that by 2023, data literacy will become an explicit and necessary driver of business value, demonstrated by its formal inclusion in over 80% of data and analytics strategies and change management programs.⁶

Foster data literacy—all the time

Gartner expects that by 2023, data literacy will become an essential and necessary driver of business value, demonstrated by its formal inclusion in over 80% of data and analytics strategies and change management programs.⁶ But keeping up with data literacy shouldn’t be an annual or quarterly endeavor—it’s a constant. When employees are data literate, they’re empowered to make decisions that are backed by science, and tied to intelligent workflows and intuitive tools that apply technologies for exponential growth. “If you’re trying to get to a data-driven culture and you don’t empower people, that is in a sense an oxymoron,” Bhandari says. “If it’s a data-driven culture, then people should be looking at the data.”

Build strong partnerships across the organization

On the most basic level, your job as a data leader is to help your organization make the wisest decisions about managing and using data. But those decisions have enormous reach and lasting outcomes. Your strategies affect the entire organization and everyone who interacts with it. As you build and strengthen partnerships at every level, be open to feedback and collaboration, and expect the unexpected. Because something fascinating happens as you grow a data-first organization. The more your vision threads into the organization’s DNA, the more you can “let go” by simply supporting a culture of engagement and skills, one in which people are motivated to learn and take on new roles. Through it all, continue to communicate purpose and goals with clarity and an eye on the future.

Make data your differentiator

Your organization, inspired by your data strategy, is rallied behind you. As you augment existing technologies and introduce new ones to simplify data access at every organizational level, remember that you're doing more than creating efficiencies and driving new insights—you're building a culture of people with a passion for using data to its full potential.

Ready to deliver on your data strategy?

[Build your data architecture →](#)

Talk to an expert

[Book a meeting →](#)

Endnotes

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