



ENTERPRISE TRANSFORMATION

# Capabilities of a Modern Digital Business

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# Executive Summary

Many enterprises set out to transform their business with an upfront strategy and a rigid three-to-five-year plan only to fail in the execution. To help these customers, AWS analyzed the success patterns and insights from hundreds of current customer transformation stories, and have identified six (6) capabilities that enable a successful journey to a modern digital business.

In our experience, customers have more success when transformation is driven through an iterative approach, anchored by business objectives. Each iteration has its own measurable value to the business, but also builds a localized capability. Over time, the capabilities become ingrained within the organization and drive responsiveness to meet the ever-changing needs of the customer, while also optimizing delivery and operational efficiency.

In this whitepaper, we introduce the capabilities that enable you to become a modern digital business through the adoption of technologies and modern ways of working.

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# Introduction of Capabilities

Most large organizations struggle to adapt to the pace of change required to become a modern digital business. We'll go over the capabilities needed to leverage digital technologies and show you new ways of working that will delight your customers.

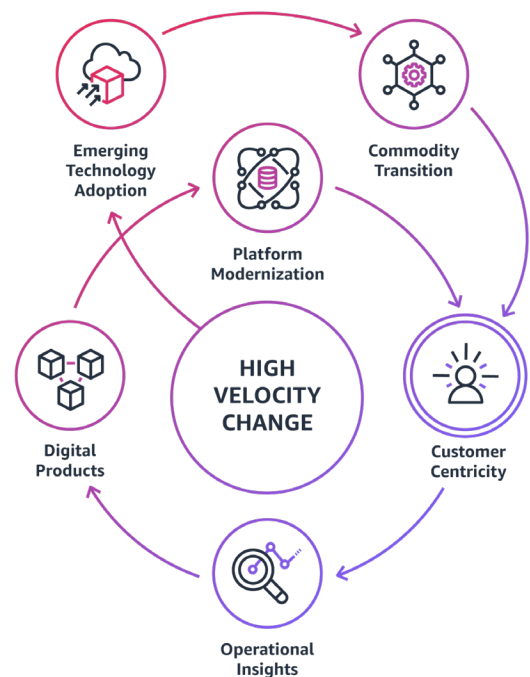
## Capabilities at a High level

The first capability is **[1] Customer Centricity**, used to understand what your customers' needs and wants are, and the value it creates for your business. Next is **[2] Operational Insights**, which is a way to prioritize initiatives with the greatest impact to business operational performance.

Having established the right opportunities and priorities, you can distribute ownership across the lines of your business by leveraging **[3] Digital Products** to deliver growth, agility, and/or business operations improvement while also employing **[4] Platform Modernization** to improve long-lived core systems, making the associated data more accessible.

A desire to execute product and platform capabilities faster creates demand for **[5] Emerging Technology Adoption**, leading you to deploy the latest digital technologies that were previously not possible. Meanwhile, as the technology of yesteryear becomes undifferentiated, you can reduce cost and overhead in your business as well as IT organization with **[6] Commodity Transition**.

With all six capabilities at scale, your organization becomes a modern digital business capable of high velocity change.



# Capabilities Deep Dive

This section explains each capability and answers the following questions:

- What do you need to do to achieve the capability?
- What are the pitfalls to avoid?
- Where have others achieved success?



## CAPABILITY NO. 1

# Customer Centricity

Customer centricity focuses on building consistently used mechanisms<sup>1</sup> to define durable customer opportunities. These are areas of business your customer will always demand to be better, no matter how significantly you improve them<sup>2</sup>. Well-defined customer needs lead to investment in teams that innovate on behalf of your customers, while also driving new product offerings that evolve along with customer needs. Customer centricity puts durable customer opportunities at the center of everything you do — moving beyond simply knowing what a customer wants — to deeply understanding the context of their situation.

### ☑ What do you need to do?

**Culture.** Changing from a process and program-centric organization to a customer centric organization requires a top-down culture shift that focuses on solving customer problems. Start by building messaging and values or principles that highlight the importance of solving problems for customers, which will inherently earn their trust. When this capability is at scale, anyone in the company can identify and define a customer problem or opportunity. This output creates a consistent approach

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1. A mechanism is a process that converts inputs into desired outputs on an ongoing basis.

2. Jeff Bezos said it eloquently in Amazon's 20th annual shareholder letter, "One thing I love about customers is that they are divinely discontent." He later expanded to say, "People have a voracious appetite for a better way, and yesterday's 'wow' quickly becomes today's 'ordinary'."

to assess and validate which customer problems are advantageous and profitable to solve. This same approach also defines the measurement of progress and how incremental value is realized by the business.

**Delivery Models.** Being customer-centric correlates with deploying delivery models that are decentralized, allowing teams closest to the customer experience to flourish. But don't go and restructure your entire organization yet. Start small by identifying a single area to develop and test the approach. Gather feedback from your preliminary teams and identify where processes, policies, or cultural challenges obstruct this capability.

**Celebrate Success.** Achieve early wins and highlight customer testimonials. Speak first about the positive impact your company has on the lives and businesses of customers and secondly about the impact it has on your own business success. Internally, highlight and build case studies about the teams that made the customer success possible and circulate examples of what "good looks like."

## ⚠ Pitfalls to avoid?

Even if your data is centralized, it's best to avoid building a centralized customer solution. Centralized teams are usually the furthest from the customer and often lack the context needed to holistically solve customer problems. Customer-centric teams are closest to the customer and use insights to define the next opportunity to solve on their behalf.

The more you focus on creating a culture where everyone is genuinely concerned about the customer experience, the better you'll be able to develop new and innovative ways to help their experience.

## 📖 Where have others achieved success?

Amazon's "Day 1" mentality is an operating model and a culture that puts customers at the center of everything Amazon does. Putting "Day 1" into practice relies on maintaining a long-term focus, obsessing over customers, and enacting bold innovation.

In every annual report, Amazon outlines the fundamental measures of their potential success: relentlessly focusing on customers, creating long-term value over short-term corporate profit, and making many bold bets.

These principles have remained consistent for over two decades and lie at the heart of what is known at Amazon as the "Day 1" mentality.

For more information, read the [Elements of Amazon's Day 1 Culture](#) article.



## CAPABILITY NO. 2

# Operational insights

Operational insights adequately define opportunities to improve business operation efficiency and quality. Modern digital businesses constantly analyze their organization and customer experience by looking for areas that can be optimized and, in doing so, improve their operational margin and customer experience.

Many enterprises start with industry solutions and then look for a problem to solve, like a hammer looking for a nail. Conversely, modern digital businesses identify operational opportunities, and then look for the right tools to solve the problems. Operational insights are supported by data rather than feelings — a well-articulated operational insight builds conviction that something can be done, making it easy for teams to prioritize and fund the effort among the rest of their work.

### ☑ What do you need to do?

**Culture.** Like customer centricity, operational insights start with company culture. Building messaging — supported by principles or values — that focuses on personal ownership, diving deep, high standards, and frugality from the CEO down, emphasizes the responsibility of everyone to improve the business. Early wins can be created in most enterprises by inspiring people to speak up about obvious inefficiency, which can then spin into larger, more substantial opportunities.



**Data Democracy.** Operational insights starts with data. In many enterprises, data owners of large enterprise systems, such as finance, delivery management, HR, enterprise resource planning, and service management, tightly guard their confidential and sensitive data. In modern digital businesses, operational insights are accessible across the organization for the right people — owners who determine opportunities to quantify and support improvement recommendations. In order to achieve this, data owners should be brought in early and recruited to be the drivers of operational insights.

**Ownership.** It is common for enterprises to report business performance and strategy, using data, in an annual report. Modern digital businesses institutionalize reporting and insights to drive a more frequent, monthly, or even weekly, inspection of the same data to drive iterative operational improvement. These insights need to be presented in a consistent format through a repeatable process for inspection with accepted decision criteria for when to invest in a possible improvement. It is not enough just to have the data; it's important to delegate and distribute authority to owners who can act on your operational insights.

## ⚠ Pitfalls to avoid?

Avoid perfection over progress: remember that organizational insights may need to start small, so it's a good idea to focus on driving better data-led decisions as part of your business, and then scale out as needed.

Don't centralize data aligned to a hierarchical control structure. Delegation of change and democratization of data go hand-in-hand. With that said, security needs to be at the foundation of insights and will likely require early investment during your journey. But keep in mind, democratizing data does not mean data is made available to everyone, especially your sensitive customer and operational information. Role-based security ensures that decision makers have what they need, while keeping your data safe.

Modernizing existing operational insights by making them an on-demand capability is an oversimplification. Instead, modern digital businesses harness new sources of information to augment their foundations. They include data integration with partners and suppliers (supply chain focus), geographical and climate data (sustainability focus), and of course, customer insights (customer focus).

## 🔍 Where have others achieved success?

GE Power is a world energy leader providing technology, solutions, and services across the entire energy value chain — all the way from generation to consumption.

They use data analytics on AWS to help power plant customers save millions of dollars, stream 500,000 data records per second, and scale to support the ingestion of 20 billion sensor-data tags.

They provide global solutions for power generation to utilities and power companies.

GE Power equipment generates more than 30% of the world's power. To ensure these plants are performing efficiently, the company relies on Predix, an application that collects and analyzes data from thousands of Internet of Things (IoT) sensors placed on power plant equipment. GE Power uses this data to monitor the overall health of their customers' equipment, so they can proactively take maintenance actions during scheduled downtime, instead of responding to failures as they take place, which is magnitudes more costly.

For more information, read the [GE Power case study](#).



### CAPABILITY NO. 3

# Digital Products

The capabilities outlined previously identify and define opportunities to transform (“demand”) your business. The remaining capabilities orient you and provide ways to meet demand (“supply”).

Digital products use modern technologies to deliver features that meet the relentlessly high expectations of the customer. Supported by digital product teams organized around durable customer needs, digital products are iterated on quickly and deliver growth, agility, and/or business operations improvement.

Digital product teams are a distributed capability deployed across lines of business. Cross-functional, decentralized, customer-centric product teams have autonomous decision-making authority supported by guardrails that are enforced by operational mechanisms to ensure quality.

## ☑ What do you need to do?

**Organization.** Use customer centricity or operational insights to find and prioritize where to start a product team (or a handful of teams) and build them in accordance with meaningful products in your business. The product team(s) must be persistent, with a focus on building and owning their product long-term. Because they are solving for a durable need, the team should be long-standing and work to evolve the customer experience. Product teams gather direct feedback from

their customers, which can be internal or external from a supplier or partner. Start evaluating how you could scale out digital product teams today, including what the right role makeup for the team would be, as well as the hiring and training of the different roles.

**Agile.** Product managers leverage customer centricity and operational insights to prioritize new products and feature delivery. Product releases are iterative, ensuring a high velocity of change, taking care to not get bogged down with all the answers before the work has even started.

**Leveraging Emerging Technology.** Digital products fall into one of two categories: evolving existing products or building net-new ones. For existing products, teams own applications that are refactored or replatformed<sup>3</sup>, taking advantage of cloud technologies to make a better or more efficient process. Similarly, new digital products are fully optimized and leverage cloud-native technology to be fast to market.

## Pitfalls to avoid?

Avoid being subservient to existing policies and practices; different teams may need different policies. Not all products or solutions are created equally and therefore should not be governed by the same internal rules and guardrails.

Avoid other teams that act as a proxy for the real customer. This causes bottlenecks in feedback, misinterpretation of the need or want, and lacks context.

Avoid tasking a demand for change to the wrong team, as doing so will misalign objectives and impair their ability to deliver. Always consider if you need to add a new team with a different objective measurement to support a net-new demand.

## Where have others achieved success?

HBO Max, Warner Media's direct-to-consumer platform offering best-in-class quality entertainment, launched its platform and began its global rollout across Latin America and Europe.

HBO Max digital product teams use an event-driven architecture — with security built in — to scale up and serve 70 million global customers. This service extends beyond static content to globally-scaled, live-streaming content, such as sporting events.

For more information, read the [HBO Max case study](#).

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3. Cloud migration strategies for applications (7Rs) include: Refactor, Replatform, Repurchase, Rehost, Relocate, Retain, and Retire.



#### CAPABILITY NO. 4

# Platform Modernization

Platform modernization is the capability to transform your existing technology assets and make the data contained within more readily available, or to create integrations to deliver new business value. Enterprises depend on business logic, so the data that is often locked up in enterprise platforms doesn't have the flexibility to support changing business processes, making it hard to integrate and scale. All too often, the monolithic enterprise platforms that once served you well are now a source of complexity and delay for your digital product teams.

Modern digital businesses prioritize platform modernization based on their need with a focus on access to business logic and/or data. There may also be a compelling event for the assets, such as end-of-life platforms or commercial agreements, where cost or risk avoidance makes it a greater priority.

Modernizing core systems makes them more flexible, scalable, reliable, and easier to interact with through modern approaches such as application programming interfaces (APIs). Additionally, platform modernization unleashes the power of historical data as a competitive differentiator by making it accessible across systems and lines of business, in turn creating new operational insights.

## ☑ What do you need to do?

**Prioritize by Value.** When modernizing existing assets, you should prioritize those with the most business value. These are the platforms and data assets that warrant transformation investment over migration to the cloud. Oftentimes, these assets are your “big rocks” and are significantly more complex with a risk of change.

**Modernize by Platform.** Once prioritized, a modernization team with a deep understanding of the platform or asset will compile requirements, timelines, and dependencies. This team completes the work of refactoring, replatforming, or repurchasing via software-as-a-service (SaaS), and supports the product long-term. While building this capability within your organization, you might consider engaging specialist partners to bring in modernization architectural patterns and approaches to help guide your journey.

## ⚠ Pitfalls to avoid?

For this capability, “starting small” might not get you to your desired outcome. Avoid platform modernization that is not aligned with business needs. The expected outcomes of platform modernization should be correlated with the demands from the customer centricity or operational insight capabilities. Although the first platform modernization might take you longer than a proof-of-concept project, your modernization team(s) will work through real problems, such as security concerns, integration challenges,

or business process changes. These lessons can then be applied as new patterns and best practices throughout your ongoing journey.

Specialist partners bring experience to high-risk modernization efforts, but you should resist the desire to outsource the work completely. Partners should work side-by-side with your platform teams to teach them the capability while ensuring they learn the subtle intricacies of your system.

## 🏢 Where have others achieved success?

Nationwide, a Fortune 100 company based in Columbus, OH, offers a range of insurance products and retirement plans. Over the past two years, the company has migrated over 250 mission critical applications and data stores to AWS. These include Nationwide.com, Claims, Management, Policy Administration, and Data Warehouse systems. Nationwide prioritized and modernized these core platforms early in their journey to unlock the data within them and enable modern integrations that support new products.

Nationwide built its data lake using AWS services with a process to curate and classify the data for exploration. With this platform, they gain new data insights quickly and deliver new features and products faster to their agents and customers, such as usage-based insurance and Nationwide Coverage Assistant for small and medium businesses.

For more information, watch the [Nationwide case study video](#).



## CAPABILITY NO. 5

# Emerging Technology Adoption

Emerging technology adoption is using the latest digital technologies to build new products that weren't previously possible, deliver increased speed, and offer more flexibility, reliability, and efficiency to your product portfolio. Modern digital businesses encourage and empower teams to adopt emerging technologies whenever they can improve the product or platform.

Security, governance, and operational teams (in centralized IT or lines of business) in these modern digital businesses provide efficient and accelerated approaches to review and approve the security controls and best practices when using emerging technology services. These centralized teams will often extend beyond initial best practice guidance by creating reusable artifacts that are embedded with best practice deployment logic. This allows product teams to deploy quickly and autonomously, accounting for regulatory control and operational management.

### ☑ What do you need to do?

**Focus on Value.** Like the capabilities before, investment is driven by product teams working to deliver business value, balanced by your tolerance for risk. The outcomes of both customer centricity and operational insights should clearly define what the value product teams are trying to create in terms of customer experience and revenue or margin opportunity for the business.

Emerging technology adoption is often required to either accelerate a product's or solution's speed to delivery, or deliver a product or solution that was not possible before the technology was created.

**Don't Fight Gravity.** Emerging AWS technologies reduce development time by weeks or months when the technology is accessed via APIs versus when it's created internally. These decisions directly impact who is first to market with new product ideas. Emerging technologies will be adopted by other companies in every industry, including many of your direct competitors.<sup>4</sup>

**Focus on Speed.**<sup>5</sup> Traditional enterprise processes for software procurement, acquisition, and adoption are designed to deliver efficiency to centralized IT and operations teams, support cost reduction through procurement negotiations, and protect the enterprise brand. These processes are often designed with a "no" default for new technologies. Only by exception, with executive support, do new technologies get approved. Procurement and operational policies resist emerging technologies in lieu of using existing software bought in bulk at a lower cost and software that has already established operational support.

These existing processes slow down time to market, reduce the capability of new feature releases, and hide security risks in homegrown

software versus known risks in emerging technologies. Modern digital businesses treat product development teams as customers, give them a sense of urgency, and employ the use of automation. Invest early in this change and challenge pre-existing policies that say differently.

## ⚠ Pitfalls to avoid?

It is common for enterprises to operate the cloud platform as a shared service within their IT organizations. However, this often erodes the business's ability to invest in the latest technologies for the sake of their customers or business. IT is often delayed in enabling services for their businesses because they treat the cloud as just another data center or a public version of their virtual platform.

Avoid looking at the cloud through the service lens of IaaS, PaaS, and SaaS. These definitions might help you understand what to expect in terms of ownership from your provider, but modern digital businesses align the needs of their teams with business value rather than being overly constrained by service layers.

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4. Andy Jassy, Amazon CEO, described this well in his 2020 re:Invent Keynote when he said, "you can't fight gravity."

5. "Speed is not preordained. Speed is a choice," is another Andy Jassy statement. He highlights for enterprise executives that creating an urgency to experiment and learn is required to stay competitive in today's modern digital world.



## ▣ Where have others achieved success?

Capital One, which is among the largest banks in the United States, announced in November 2020 that they had completed the migration from all eight of its on premises data centers to Amazon Web Services (AWS), becoming the first US bank to report it was all-in on the cloud.

To drive its transformation, Capital One planned to adopt more than 30 AWS services. Moreover, the transformation that it envisioned went far beyond migrating its information technology infrastructure and closing its data centers.

Capital One's digital transformation began with the ambition to become a modern technology company that could develop its own applications and lead the banking industry by innovating for their customers. Along the way, the company reinvented itself through talent, culture, operations, and technology infrastructure. As a result, Capital One's cloud migration became a foundation for building the "bank of the future" — creating their blueprint to quickly and continuously innovate to meet changing customer needs and preferences.

For more information, read the [Capital One case study](#) and Capital One's own mindset change in their [Migrating my Mindset from On-Premise to the Cloud](#) article.



## CAPABILITY NO. 6

# Commodity Transition

Commodity transition recovers cost and personnel time from commodity and undifferentiated<sup>6</sup> assets and processes. Prioritization of commodity transition is typically driven by an opportunity to reduce Total Cost of Operation (TCO) and compelling events, such as data center closures. Modern digital businesses often utilize SaaS products — or third-party partners when a SaaS solution is not available — to operate their commodity workloads. Resources that previously supported these workloads should be trained and redeployed to support more valuable work, such as automating cloud deployments, modernizing platforms, and working on a product team.

When this capability is mature, modern digital businesses effectively use the cloud and outsource partners to replace the high-cost staff that are performing low-value work. Commodity transition ensures the cloud and outsourced partners are providing scaled commodity services while teams avoid spending time and money reinventing workloads that do not differentiate them from their competition.

### ☒ What do you need to do?

**Evaluate TCO Opportunity.** In order to build the commodity transition capability, you must first define

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6. An undifferentiated asset or process is one that doesn't add business value to the organization, but is "the cost of doing business."

the goals and objectives of the initiative. Identify the portion of your application portfolio that is not business critical or customer facing. In a TCO reduction strategy, you must identify software and hardware licenses and maintenance costs that can be eliminated via migration to open-source software on AWS. Look for opportunities to eliminate costs associated to development, testing, and disaster recovery environments that are rarely used. Pay close attention to resources that are no longer of use but are still being maintained and set targets for application and workload retirement. Prioritize workloads where the movement or change can be directly tied to the cost savings opportunity identified.

The goal is to reduce cost while maintaining secure and reliable operations. Remember: just because commodity workloads have a low value to your customers does not mean they are not critical to your operations.

**Evaluate Risk.** Once a workload has been identified as commodity, you must make a decision to outsource support and/or move hosting to a third-party, maintain the workload in the cloud environment, or replace it with a SaaS solution. Being proactive and looking for opportunities helps prioritize which workloads and applications can be targeted — for example, if the workload is running out of vendor support. Any time these applications contain sensitive data (e.g., customer data, PCI, HIPAA) the risk is greatly heightened.

Moving these workloads quickly with a get-to-green migration strategy and a stay-green operations strategy is often achieved more easily by transitioning the commodity workload to a 3rd party vendor, a SaaS provider, or retiring the workload altogether. Oftentimes there can be a significant financial opportunity associated with eliminating extended maintenance contracts.

**Automate.** Commodity workloads are often commercial off-the-shelf (COTS) applications and have a vendor-driven dependency for upgrades (e.g. supported operating systems) and maintenance (e.g. patching and version upgrades). Even when COTS are not outsourced, due to the vendor dependency, they don't require a product team because they don't have a high frequency of change. Commodity transition teams use automation to reduce manual intervention for maintenance tasks, scaling to drive operational efficiency and cost optimization.

## Pitfalls to avoid?

Customers often start small to avoid risks as they adopt the cloud by migrating commodity workloads. You should evaluate if moving commodity workloads is actually going to achieve the business objectives associated with cloud adoption. This can also lead to the misunderstanding that the cloud is just another hosting location for IT opposed to a driving force for business transformation.

If you have already started your cloud journey this way, realign your cloud adoption to corporate strategy objectives, and reset the organization's perspective on the broad enablement of the value of digital and its potential impact on your customers and business.

## **▮ Where have others achieved success?**

Thomson Reuters, a leading provider of business information services, divested their financial data and trading business with Refinitiv. As part of a transition services agreement, the company needed to exit Refinitiv-owned data centers. The challenge required the company to migrate more than 400 applications and 10,000 assets, split across seven data centers, on an accelerated timeline.

Using AWS Managed Services (AMS), Thomson Reuters migrated seven globally dispersed data centers, hundreds of applications, and thousands of assets to the AWS cloud five months ahead of schedule. Because it was able to exit Refinitiv data centers earlier than planned, the company achieved significant savings.

Once their migration was complete, the Thomson Reuters team continued to work with AWS to further modernize the migrated applications, improve operability, and reduce overall cloud costs. This effort resulted in optimized service offerings and additional cost savings of approximately 20%. The migration to the cloud also increased scalability, improved agility, and helped accelerate modernization that positioned the company to be more innovative.

For more information, read the [Thomson Reuters case study](#).

# Summary

The majority of enterprises have recognized that they need to move from operating like a traditional enterprise to performing like a modern digital business. Achieving the objectives of a corporate strategy by delivering differentiated business impact requires better use of digital technologies.

Some enterprises will take one step at a time, establishing isolated capability improvements to gain buy-in from stakeholders. AWS offers programs and guidance to support this approach, as it represents a typical customer journey. On the flip side, for those with an urgent need, and executive support, AWS provides a holistic and tailored approach to quickly drive change with our Enterprise Transformation Program. Additionally, AWS partners with industry leading Business Consulting Advisory Partners and Global Systems Integrators, so we can jointly help support your journey.

No matter your approach or partner, becoming a modern digital business must be anchored to corporate strategy priorities throughout the journey. It is easy to get caught up in the effort, scale, and complexity of a broad capability enablement, beginning the transformation without the necessary forethought. Rather, you should remain focused on prioritizing the outcomes of your digital products, accelerating the pace of change, and delighting your customers.

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## AUTHOR BIO

Mark Preston is the worldwide architect of the AWS Enterprise Transformation playbook. He works with CXO executives to align their business strategies and tailor approaches to deliver required business outcomes while also scaling the capabilities discussed in this paper.

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## CREDITS

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