

# Leveraging ISO 20022 to extract value from data

## → INTRODUCTION

ISO 20022 will be celebrating its fifteenth birthday this year. It has taken its time becoming widespread, but few can argue that ISO 20022 is now the 'de facto' standard for payments. Adopted in over 50 countries for payments processing and utilised by thousands of banks, ISO 20022 is here to stay. But implementation of the standard is not an end unto itself. ISO 20022 is often touted as an 'enabler' – but of what? We look at what it really takes to extract value from ISO 20022 and how to make the standard work for you.

### → Data as the new oil

Data is likely to be one of the most important commodities of the 21st Century and has often been described as the 'new oil'.

A July 2017 article in Global Banking & Finance Review titled **Why Data Has Become Banks Most Important Commodity** stated, "faced with increased competition, traditional banks must utilize data effectively and transform themselves into data-driven organizations that will deliver knowledge banking. This will lead to better financial products and services for customers that suit their needs and expectations."

Enhanced data with payments has many benefits. Regulators see enhanced data as having potential to create new business models and improve access for new entrants into the sector, stimulating competition and innovation. It could also enhance the detection of financial crime and strengthen protections for customers. However, a rocky road may lie ahead. In July 2019, the Dutch Data Protection Authority wrote a letter to the Dutch Banking Association stating that it was concerned about non-financial information that is recorded, such as the location, time, and the payer and receiver of transactions. Other information could expose what may be considered as sensitive information e.g. membership of religious institutions. The regulator appeared to be referring to ING bank, which was reportedly planning to use customer payment data to send them more relevant offers.

At present the regulatory framework around the capture, use and exposure of data is still in its infancy. However, one thing is clear, in financial services and payments in particular, data is at the epicentre of most bank's strategies on how to monetise payments.



## What is ISO 20022?

ISO 20022 is an international standard that defines the platform for the development of financial messaging standards. It was developed to facilitate electronic data interchange between financial institutions. ISO 20022 is a single, common 'language' for all financial communications – no matter where a business is based. It allows participants and systems in different markets to 'talk' to each other using consistent terminology and formatting.

### → Data in use:

In 2017 BBVA launched 'API Market'. In making commercially available eight APIs through the BBVA API Market, companies, start-ups, and developers will be able to build new products and services by accessing and integrating customer's banking data – with their permission – into their applications. BBVA also launched 'PayStats' offering anonymized and aggregated statistical data from millions of transactions performed with BBVA cards and any other cards in BBVA POS terminals, creating a virtual map comprised of consumers' habits, demographics and origins – for other companies to purchase.

The Federation of Finnish Financial Services defined ISO 20022 Tax Report message descriptions. The message enables transmission to the tax authorities of VAT data collected from the data contents of electronic invoices (that also utilise ISO 20022). The data contents of electronic invoices can also be used in combating the grey economy. For example, the construction sector has defined a common identifier for new building contracts. The identifier is indicated on the ISO 20022 electronic invoice, meaning that the party who has ordered the contract work can report the contract prices, specified by agreement and construction site, to the tax authorities. Such a report can also be compiled automatically on the basis of electronic invoice data.

In Finland all SMEs have a payment account from which electronic account statements can be obtained. Electronic invoice data can be linked with electronic ISO 20022 account statements and other account transactions, making it possible to automatically compile an SME's or other organisation's accounting data.

As businesses of every shape and size are being impacted by the forces of ongoing global digital transformation, the value of data is taking on immense importance. Merely collecting data is not enough; mining and extracting value from this data will be a decisive differentiating factor for banks and other players looking to compete and take their customer propositions to the next level. However, according to Icon Solutions' recent whitepaper published alongside Aite Group only 18% of banks report that they are in the process of shifting from a transactional revenue model to a data driven revenue model. If banks are to truly compete with Big Tech companies such as Facebook, Amazon and Apple they need a data strategy that can enable them to extract value from data at rapid speed and scale.

## → ISO 20022 as an enabler of consistent data capture

Financial institutions are under an increasing demand to “open up” data to third parties. This trend is being driven by demand from the Fintech community as well as a heavy push from regulatory efforts such as PSD2 in Europe and the Consumer Data Right in Australia. These all introduce a range of requirements that need to be met rapidly by the industry and are greatly focussed on the use of collaborative Application Programming Interfaces (APIs) as a means of achieving open access to data. APIs are often described as the key to exchanging data at pace with a multitude of end users, but this alone is not sufficient. APIs are only part of the story. For data to truly be of value it needs to be machine readable, consistently structured and standardised. Enter ISO 20022.

The practical use of ISO 20022 should be at the cornerstone of any data strategy and a vital piece of the payments data puzzle. The ability to consistently structure ISO 20022 messages and data elements allows greater capacity to provide rapid data analytics.

At the heart of ISO 20022 is a data library or dictionary where a vast array of business terms are defined. Almost all key payments terms are lodged within this library to be reused by the industry. The ISO 20022 message model enables organisations to put these terms together into messages that can be used globally e.g. a payment initiation.

**Below is an extract from an XML based ISO 20022 message:**

```
<PmtInf>
  <PmtInflId>ABC/086</PmtInflId>
  <PmtMtd>TRF</PmtMtd>
  <BtchBookg>>false</BtchBookg>
  <ReqdExctnDt>
    <Dt>2012-09-29</Dt>
  </ReqdExctnDt>
  <Dbtr>
    <Nm>ABC Corporation</Nm>
    <PstlAdr>
      <StrtNm>Times Square</StrtNm>
      <BldgNb>7</BldgNb>
      <PstCd>NY 10036</PstCd>
      <TwnNm>New York</TwnNm>
      <Ctry>US</Ctry>
    </PstlAdr>
  </Dbtr>
```

The highlighted fields are data elements in the ISO 20022 dictionary that have a definition sitting behind it that has been internationally agreed. And when you think about it from a data standardisation perspective, these terms and definitions can be used for Distributed Ledger Technology (DLT), APIs and any other initiative that may need a level of data standardisation. This will ensure consistency of data usage, greater interoperability and achieve higher levels automation.

DLT requires a level of standardised data both within a banks' ledger and to exchange data with other banks' ledgers, much like any payments infrastructure platform. Incorporation of DLT transactions into legacy systems would require a flexible data model or use of integration tools. However, defined standards would be needed to support this. The established data dictionary can be the basis for APIs upon which DLT integration is based, or a DLT can be built with ISO 20022 as the native data format.

The role of payments messaging in general is going through a moment of existentialism. Messages between banks as well as within banks are likely to contain a variety of data, some of which may not even be financial services related. In the US, a big driver for real time payments has been the way in which the system can support the transmission of data from other sectors e.g. tax, health and potentially even criminal record data. For this data to be used in a meaningful and cost-efficient way, it is vital that consistency is promoted.

**‘The goal is to turn data into information,  
and information into insight’**

Carly Fiorina, Former CEO, HP

## → Types of customer data used in payments

Payments data can be a mix of financial, transactional, behavioural and other types of data, which PSPs and other entities collect in the process of providing payment services. An enhanced data capability can enable recipients to see information relating to the purpose of the payment, result of the payments (cash, liquidity, artificial intelligence etc), tax and benefit information, a personalised message or underlying business transaction details. The feature can also provide a capability to link items to a payment. The challenge is not in the business case but how to apply it consistently and to monetise it.

ISO 20022's extensive data dictionary houses many existing payments terms that can be deployed within a message. However, if a term does not exist e.g. Overdraft Limit, the open and international process allows for this to be added to the data repository for the financial community to use.

There are varying types of information that can be extracted within the payments chain. However, new data protection and privacy regulations such as the Global Data Protection Regulation (GDPR), are a challenging paradigm when viewed alongside the second Payment Services Directive (PSD2). There are potential conflicting regulatory expectations when it comes to data:

| PSD2   | GDPR  |
|--|---|
| Banks are required to open customer account and transaction data to third party providers (TPPS) | GDPR requires banks to protect customer data and imposes significant penalties for that fail (up to four percent of global annual turnover) |
| The directive encourages an open-banking environment   | With the stringent requirements, the regulation might make open banking implementation a little unattractive                                |

Source: Capgemini, World Payments Report 2018

PSD2 emphasizes data sharing with PSPs, the GDPR proposes to protect personally identifiable information (PII) from TPPs. Further, on data control, the GDPR requires customer consent for processing data while the PSD2 requires it for sharing with other institutions.

Due to this, banks may be reticent to utilise and monetise these data types to their maximum. However, this should not stall progress as institutions can cut their teeth on types that are considered 'safer' than others.

→ **Raw data** - contains personally identifiable information (PII), and can, for instance, show where and how a specific person shops at a specific time — and is generally the most valuable type of data, but the one most at risk for theft or misuse.

→ **Anonymous data** - has had PII removed. This type of data is much more general than raw data and lacks such details as consumers' specific addresses and the accurate, specific time of a purchase (for instance, a cup of coffee bought at a major chain).

→ **Synthetic data** - data sets that cannot be tracked to the original consumer or FI. Synthetic data will lack the genders of consumers, and will not offer accurate, specific times of purchases, among other factors.

Source: Overcoming Fear to make money from data: ARM Insight

In today's omnichannel world, banks will have multiple channels to serve their different customers bases, including mobile, desktop, wallet and Point of Sale. In addition, banks need to consider the rapidly advancing payment methods associated with e-commerce as well as Third Party Payment Providers. All of these areas have vast untapped data that can be extracted and monetised. In the new PSD2 landscape, where instant payments may be an alternative payment method in-store and online, banks themselves will have greater access to this data than ever before. ISO 20022 allows banks to take forward the data strategy that they have developed in a meaningful way.

## → Data as the tie between banks and corporates

One of the key drivers for instant payments and use of the ISO 20022 standard is the extended data carrying capabilities opened up by its implementation. ISO 20022 allows the potential for as much data to be included in the message, or supplementary data elements, as the implementing organisations will permit. It also allows for the transmission of images, invoices and more.

The strong relationships banks have fostered with corporate customers could serve as a starting point for investigating how they can best leverage ISO 20022 and data analytics to provide corporates with access to critical capabilities and to help growth. Most use cases are retail focused and therefore are more likely to draw significant attention from regulators. However, there are substantial benefits to the corporate community of an enhanced data offering, which can speed up solutions being brought to market.

ISO 20022 data carrying capabilities allow corporates to attach invoice data to a payment allowing for more efficient reconciliation. Corporates, particularly in Central and Northern Europe, are extremely familiar with using and managing ISO 20022 messages. In Switzerland, corporates were mandated to utilise ISO 20022 payment initiation messages as of 2018. Banks must also ensure that they can offer their corporate customers end-of-day account statements based on ISO 20022.

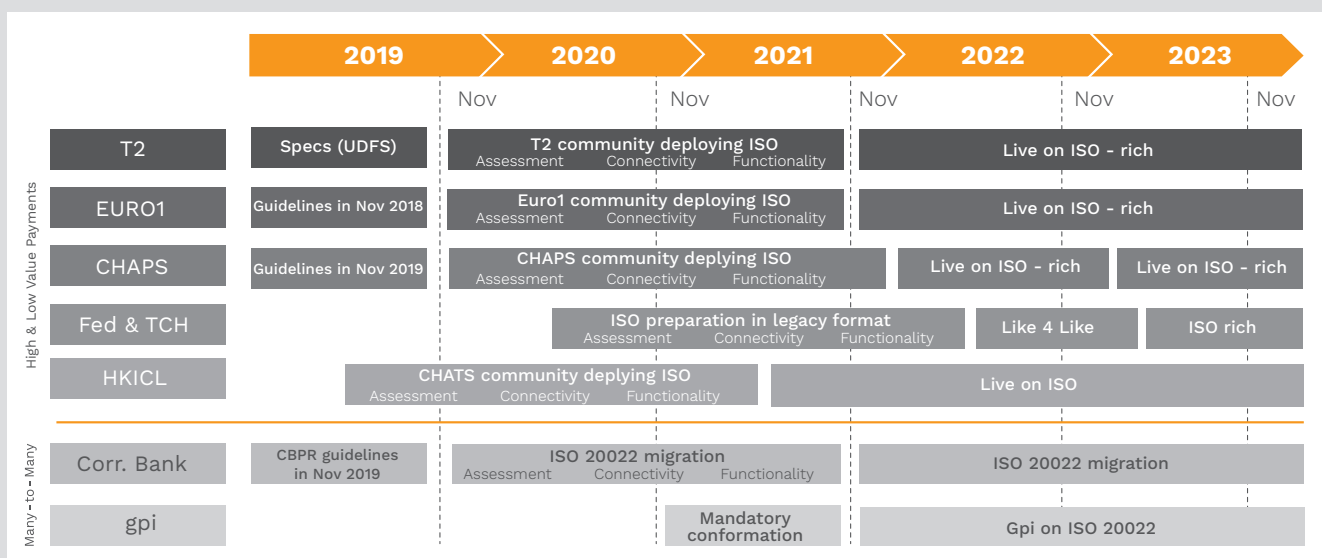
Swedish bank, SEB, supports both C2B and B2C channels through ISO 20022. SEB supports and encourages smaller corporates, with smaller volumes to use SEB's online banking tool with manual ISO 20022 file uploads. Larger corporates, with large volumes, tend to submit via secure host-to-host connection integration. SEB alongside many other global banks engage in the international Common Global Implementation Group, which seeks to harmonise corporate use of ISO 20022. Large corporates such as General Electric, Ikea and the German Postal Service participate alongside financial institutions from all over the globe to set best practice for using ISO 20022 in the corporate space.

Some banks have already made strides in unlocking these opportunities for the benefit of their customers. The previously mentioned **McKinsey & Company** article cited a recent survey that found "A few banks are already seeing the rewards. These leaders have built substantial foundations by establishing data lakes and centres of excellence and using machine-learning techniques. For them, advanced analytics is becoming a reflex action, with commensurate rewards of about €300 million in additional annual profit, on average."

Data analytics capabilities are becoming an increasingly important means for banks to differentiate themselves, harnessing high value knowledge and actionable insights to improve efficiency and increase revenue growth through the generation of added value for their corporate customers.

### Major implementations of ISO 20022 migration

Around the world Payments Market Infrastructures (PMIs) are undergoing large scale modernisation programs in response to demands for increased automation and cost efficiencies, enhanced interoperability and real-time services. In nearly all of these modernisation programs, at least in developed economies, ISO 20022 is at the heart of transformation.





## → ISO 20022 migration and what it means in practice

**Before understanding how ISO 20022 should be implemented, a full data strategy needs to be in place. Whilst not an exhaustive list these considerations should include:**

### **Business**

- What are your organization's strategic priorities and key business questions?  
How does data feature within this?
- Can you achieve your goal with internal data alone, or do you need to supplement your company data with external data, such as social media data?
- What data is needed to be captured and from which customers?
- What could be quick data wins - ideally relatively inexpensive ways to add value and demonstrate return on investment from data?

### **Operational**

- How will data be captured e.g. structured, unstructured?
- How will data be stored?
- How will data be accessed?
- How will data be processed and analysed to extract insights?
- Resiliency of data warehouse
- How will the system respond to increased data or data requests?
- Speed of data analytics

### **Governance**

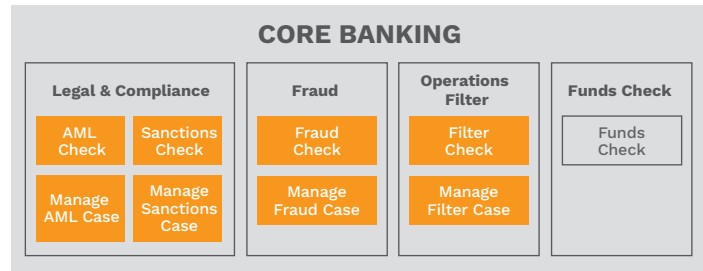
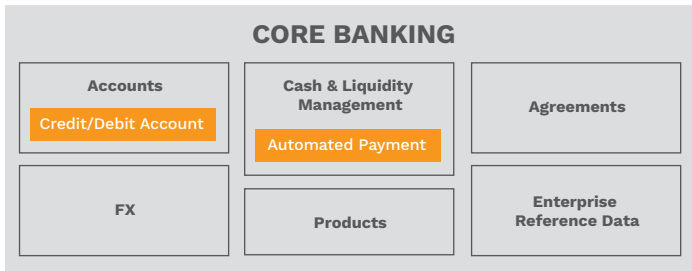
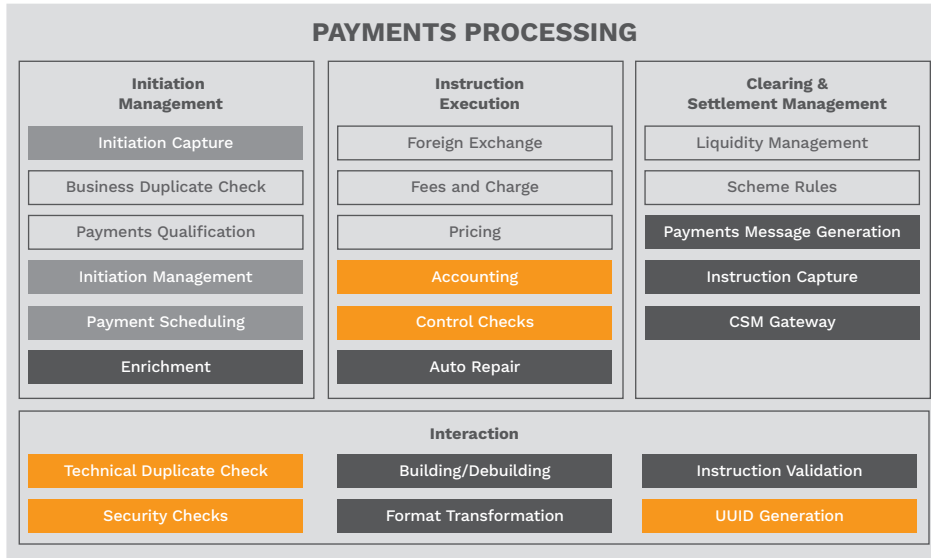
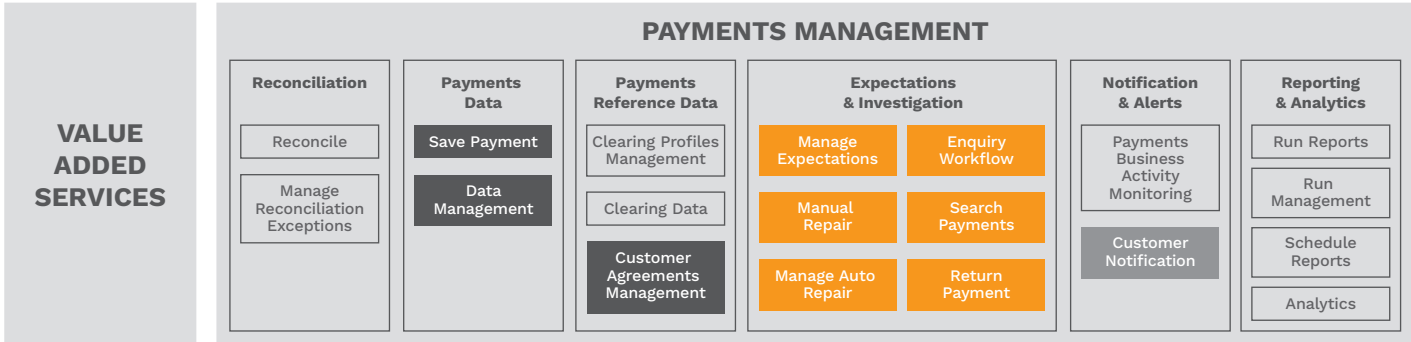
- Who is the data owner within the bank and responsible for ensuring the data is accurate, complete and up to date?
- Governance and management of data permissions both internally and externally
- Ownership of data outside of the bank and managing agreements with any third-party data sources

### **Regulatory**

- What are the regulatory considerations e.g. GDPR?
- How will you show lineage to regulators?

Once a data strategy has been formulated, only then should ISO 20022 be considered as an 'enabler' of data capture and structure. The technical and operational requirements for ISO 20022 implementation can often appear daunting. Leveraging investment in ISO 20022 requires a migration that affects not just core payments processing, but many other banking systems and departments.

For ISO 20022 to be utilised to its maximum benefit is not just an IT issue, business rules and process workflows will also be affected. Whether banks are direct clearers and/or have agency banking relationships may all effect how ISO 20022 is implemented.



**KEY** ■ Definite Impact due to Scheme ■ Potential Impact due to Scheme ■ Potential Change due to Business Requirement

ISO 20022 has the ability to carry much more data than legacy formats. Bank infrastructure will need to be capable of processing these larger data volumes and at speed for real-time payments, intraday liquidity management, compliance checks, and fraud detection and prevention.

It is likely that banks will deploy translation services in the early days of migration, to map existing message formats, such as ISO 8583, to and from ISO 20022. However, it is advised that this not be a long-term solution. The extended data carrying capabilities are one of the key benefits of implementing ISO 20022. Conversion dramatically decreases this benefit often leading to data truncation. Instead, restructuring of bank information flows and understanding where data can be stored and how, needs to be at the backbone of any implementation.

ISO 20022 can be used both as an interbank data standard as well as providing the data standardisation necessary to support API development. Meaning that banks can rely on one data standard to support all their payments requirements and market infrastructures can use one data standard across multiple different payment systems. ISO 20022 even goes beyond payments, to regulatory reporting, cash management and account switching areas also, meaning banks can rely on one data standard across multiple business areas. Therefore, its usage should be considered holistically.



One of the key challenges to leveraging ISO 20022 to support data capture is ensuring standardisation of data across the payments ecosystem. For example, newer payments infrastructures may well be ISO 20022 based but are often built alongside existing legacy infrastructure. These rarely interoperate and as such neither does payments data across payment systems. Therefore, it can be a challenge for banks to formulate a consistent customer data proposition across multiple payment systems. Banks will need to consider how these formats will work side-by-side and whether data can be extracted from these legacy systems.

A lack of market practice on data expectations between banks e.g. how to handle unstructured data and special characters within data sets; storage duration; fraud and crime screening on extended data sets all can lead to a slightly confusing marketplace with little collaborative advice. Banks should not let this hinder progress.

## → Benefits of ISO 20022

- Wide user community means that a variety of technical solutions have been developed and can be bought and used at relatively low cost and time to market
- Data harmonisation – due to the well documented ISO 20022 data dictionary, the data model can be reused for other key industry programs such as API development
- Flexibility – the standard can be tailored to domestic business needs whilst still retaining a universal understanding
- Improved industry interoperability and Straight Through Processing (STP) as there is less need for data manipulation. It also reduces the complexity, cost and risk of data manipulation and conversion in the inter-bank space and between banks and their customer
- Increased interoperability between markets and currencies
- Increased data carrying capacity; ISO 20022 allows unlimited data carrying capabilities within the message, it is up to the user community to restrict based on technical capabilities and business need

## → So what does it all mean?

To make the most of ISO 20022 and the enriched data the standard can provide, banks require a clear migration strategy before commencing implementation or blindly mapping between formats. According to a report by the World Economic Forum in collaboration with Deloitte, data will become a growing point of differentiation for banks, which, for that reason, will have to use “a combination of data strategies to collect the depth and breadth of data needed to follow the lead of tech firms in data monetization.”

Banks need to take advantage of previously made investments to catch up to Big Tech firms in this regard. ISO 20022 is a proven, flexible, modern data standard that can assist banks in homogenous data capture, of which they can receive actionable insight from.

## → Navigating the migration

**Icon Solutions enables clients to navigate the ISO20022 transformation journey smoothly through:**

- The rationalisation of existing systems that are converging to the same messaging standard
- Leveraging robust transformation and integration components.

With 24/7/365 and real-time payments going hand in hand with ISO 20022, supporting systems will need to have same responsiveness and resilience. The remit of change extends beyond the technical impact to business processes handling the enriched dataset and that is where Icon helps clients reap the benefits.

Icon has a track-record of successful global ISO 20022 implementations for Tier-1 banks, with RT1 and SEPA (Instant/Bulk) integrations the most recent projects. Our migration recipe relies on leveraging a rich library of customisable assets for the various phases of the transformation journey. Our impact assessments and gap analysis shield the customers from the migration complexities and risks.

**If you would like to find out more about how Icon can accelerate your ISO 20022 migration, call us on +44 (0)20 147 9955 or email [info@iconsolutions.com](mailto:info@iconsolutions.com)**



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Icon Solutions is a fintech partner providing world class payment and enterprise solutions to the global financial services sector. Clients include leading international institutions such as BNP Paribas, Citi, HSBC, Lloyds Banking Group and Nationwide. Whether it be assessing payments systems, producing transformation roadmaps, or simply providing subject-matter expertise, Icon enables clients to be leaner, innovative, and responsive to the demands of the future.



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