



Building a Competitive Payments Platform with ISO 20022

Why and how financial institutions should kick off ISO 20022 adoption today



Now is the right year to begin your ISO 20022 adoption strategy.

The new standard represents a sea change for the payments industry and early adopters can position themselves to see huge gains.

Table of contents

Welcome to the payments revolution.....	3
Understanding ISO 20022.....	5
One giant leap forward for payments, one small step for Visa DPS	6
The future of payments is here with Visa DPS.....	7
Understanding the advantages of ISO 20022.....	8
Creating the future of payments	10
Visa DPS delivers the first ISO 20022 payment solution in operation	12
Preparing for transformation	13
Managing your adoption.....	14
Next steps	15
Visa DPS Forward can help you accelerate development in ISO 20022.....	16

Disclaimer

Case studies, comparisons, statistics, research and recommendations are provided "AS IS" and intended for informational purposes only and should not be relied upon for operational, marketing, legal, technical, tax, financial or other advice. Visa Inc. neither makes any warranty or representation as to the completeness or accuracy of the information within this document, nor assumes any liability or responsibility that may result from reliance on such information. The Information contained herein is not intended as investment or legal advice, and readers are encouraged to seek the advice of a competent professional where such advice is required.

These materials and best practice recommendations are provided for informational purposes only and should not be relied upon for marketing, legal, tax, regulatory or other advice. Recommended marketing materials should be independently evaluated in light of your specific business needs and any applicable laws and regulations. Visa is not responsible for your use of the marketing materials, best practice recommendations, or other information, including errors of any kind, contained in this document. This document is intended for illustrative purposes only. It contains depictions of a product currently in the process of deployment and should be understood as a representation of the potential features of the fully deployed product. The final version of this product may not launch or may not contain all of the features described in this presentation.

This paper contains forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 that relate to, among other things, our future operations, prospects, developments, strategies, business growth. Forward-looking statements generally are identified by words such as "believes," "estimates," "expects," "intends," "may," "projects," "could," "should," "will," "continue" and other similar expressions. All statements other than statements of historical fact could be forward-looking statements, which speak only as of the date they are made, are not guarantees of future performance and are subject to certain risks, uncertainties and other factors, many of which are beyond our control and are difficult to predict. We describe risks and uncertainties that could cause actual results to differ materially from those expressed in, or implied by, any of these forward-looking statements in our filings with the SEC. Except as required by law, we do not intend to update or revise any forward-looking statements as a result of new information, future events or otherwise.

This report contains mentions of "real-time" payments. Actual fund availability varies by receiving financial institution, receiving account type, region, and whether transaction is domestic or cross-border.



Welcome to the payments revolution

Why should I adopt ISO 20022 now?

As digital economies continue to expand and evolve around the world, the ability to accelerate and enhance payments messaging and streamline new solution development will be vital for financial institutions looking to improve their position in an increasingly competitive marketplace.

Adopting the highly structured and data-rich ISO 20022 messaging standard sooner rather than later will help financial institutions (FIs) to stake their claim to the future of payments. ISO 20022 will help FIs make evolutionary leaps in their ability to innovate and deliver next generation payments experience.

Adopting ISO 20022 can help FIs:

- Stand out in the payments ecosystem
- Reduce technology burdens
- Increase speed to market
- Insulate against the shock of change in a quickly evolving digital marketplace

Take the next step toward faster, richer payments communications

ISO 20022 provides a cleaner, easier-to-use messaging standard that is significantly more versatile and user-friendly than the legacy ISO 8583 standard, which was initially developed in the 1980s.

ISO 20022 represents an evolutionary leap in payments communication. Similar to how streaming video platforms won out over brick-and-mortar video rental stores by offering a better, faster and more accessible user experience, ISO 20022 is the next generation of financial messaging, allowing for the expansion of data elements currently not available through the ISO 8583 payload, opening up opportunities for new use cases.



ISO20022 was a no-brainer for Chime!

We did not have much ISO 20022 experience from a technical perspective; we had more experience on the non-technical side. Visa DPS Forward did the messaging matching for us – making adoption much easier for our team!"

Michael Soares
Lead Developer, Chime

THE NEXT DIGITAL EVOLUTION IS HAPPENING IN PAYMENTS

ISO 8583

```
30323030FEFF540188E1E06A000000000008200  
331343431333132303030303030303030303  
3030303030303030303030303030303732313039  
03030303031343138343335303930393232303  
363031313834303930313131353939323936  
131313232303234313431383433355445524D4  
20202020436172644163636570746F726E616D  
E647352616E632020555330313543617264416  
303834303031313130333030303830323630  
02038343030393820040000500604005000048  
36313053303132303030344320202020004D20
```



ISO 20022

```
"TxAmts":{  
    "TxAmt":{  
        "Amt":39.0,  
        "Ccy":"978"  
    },  
    "CrdHldrBllgAmt":{  
        "Amt":39.39,  
        "XchgRate":1,  
        "Ccy":"978"  
    },  
    "AmtQlfr": "ESTM",  
    "DtldAmt":  
    {  
        "Amt":{  
            "Amt":20.0  
        },  
        "Tp": "CSHB"
```

Understanding ISO 20022

ISO 20022 is a free and open standard for developing financial transaction messages, enabling a single common language for global financial communication that can help FIs respond to changing market demands.

Designed to support messaging across the five major financial transaction domains (payments, securities, trade, cards and foreign exchange), ISO 20022 is already widely used in the global payments domain. It is the mandatory standard in Europe for the Single Euro Payment Area (SEPA), and it is the de facto standard for instant (near real-time) payments globally.

**ISO 20022 is a structured messaging methodology for the global financial ecosystem.
Designed to help streamline and enhance payments messaging, ISO 20022:**



Creates a common language for payments worldwide



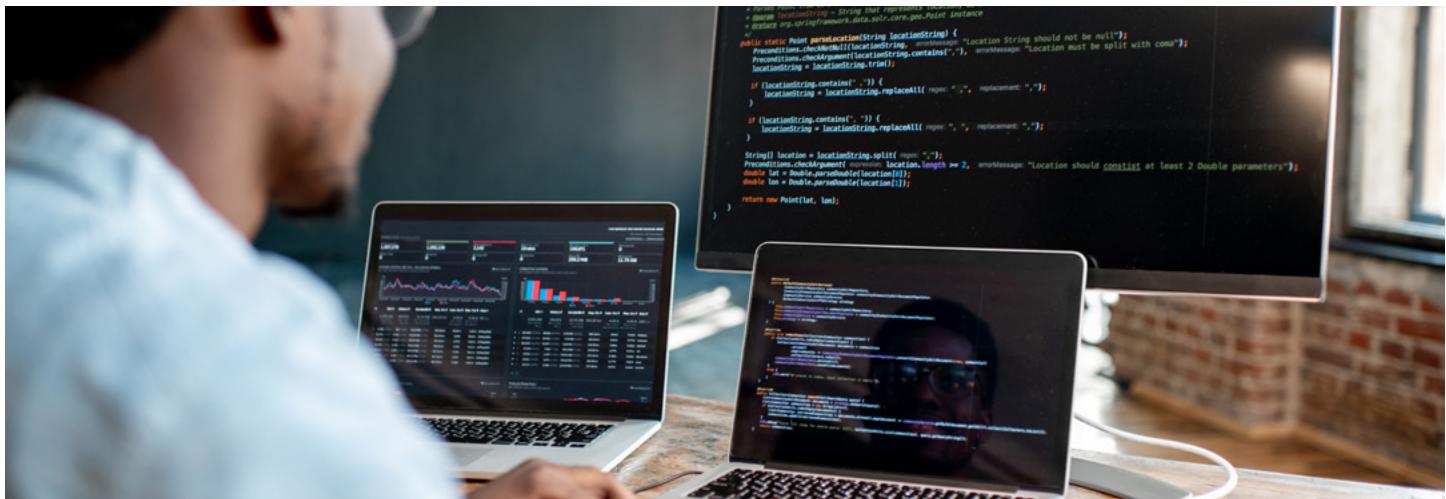
Enables an increased exchange of rich data



Uses easily human-readable JSON text



Operates on a flexible, highly modular, object-oriented structure



For an in-depth exploration of ISO 20022, read [Demystifying ISO 20022](#) from the Visa Economic Empowerment Institute.

One giant leap forward for payments, **one small step for Visa DPS.**

- ✓ **Get on the fast track to innovation.**
- ✓ **Spend less time stuck maintaining old standards.**
- ✓ **And more time developing cutting edge new payment experiences.**

Visa DPS is one of the largest issuer processors of Visa debit transactions in the world and a partner of choice for leading global financial institutions. With more than two decades of experience bringing solutions to market, Visa DPS has a long track record of trailblazing payments success — including EMV implementation, tokenization and ISO 20022 deployment. Visa DPS helps our partners to stay innovative and agile and empowers them to deliver at scale.

Visa DPS has been designing solutions and building messages in the ISO 20022 standard for more than three years, providing input and feedback to the ISO 20022 working group that has influenced message content and informed the ongoing development of the standard.

As a market leader in ISO 20022 integration and development, Visa DPS has the technical knowledge and deep development experience to help guide FIs as they start preparing for adoption. Visa payments experts and developers are ready to connect with you today as you begin working toward the future of payments.



At DPS, we've embraced a laser focus on the client developer experience. Specifically, we want to make it as simple as possible to consume our technology and create payments solutions. Embracing ISO 20022 is a huge leap in that direction and has the added benefit of supporting more modern use cases with richer data. It's the single most valuable client developer investment we've made.

Matt Smith
Principal Enterprise Architect,
Visa DPS

The future of payments is here with Visa DPS



FIs can significantly reduce maintenance and development burdens with ISO 20022

The difference in development burden between developing in ISO 8583 and ISO 20022 can be compared to the difference in skill and effort required to create a mixtape using a cassette and a boombox versus creating a playlist using a digital music app.

Early ISO 20022 adopters should expect to save more time and money over the long run by largely eliminating the significant maintenance burdens associated with ISO 8583.

ISO 20022 will help FIs accelerate the future of payments by significantly reducing FIs' technology maintenance burdens and potentially offering shorter development cycle times — allowing them to devote more resources to new use cases, and enabling faster, more agile responses to changing market demands.

Don't miss out. Stay ahead of evolving market pressures.

Put innovation and user experience at the forefront of your business strategy. Visa DPS' ISO 20022 interface was built using best-practice APIs to help ensure quick integration for clients.

Understanding the advantages of ISO 20022

ISO 20022 will help drive enhanced customer experiences

ISO 20022's extendible messaging payloads deliver data in a more flexible format than ISO 8583 messages, allowing them to accommodate future growth without having to move data around. The text format is also much easier for business users to read and understand. These richer data sets not only help drive payments efficiency by supporting increased straight-through processing (STP), they also make it easier for FIs to identify and act on new payments use cases — empowering them to deliver the next-generation user experiences consumers are looking for and introduce their customers to the future of payments.

ISO 8583	ISO 20022
Numerical code	English-based JSON APIs
Field-based format	Object-oriented format
Changes require recoding the entire message	Flexible, extendible message payloads are easy to modify

ISO 20022's fundamentally flexible messaging structure can help significantly reduce FIs' technology maintenance burdens. With ISO 8583, FIs have often spent hundreds or thousands of hours each year remapping fields to implement network messaging enhancements for multiple networks multiple times per year. With ISO 20022's structured design, once data is mapped, it requires less maintenance and very limited movement of data. Once a field has been converted from ISO 8583 format into an ISO 20022 object with specific key-value pairs, it seldom changes, resulting in less maintenance.

Adding future payment networks that are also based on ISO 20022 can result in faster adaptation, as the message content and structure will be familiar to an issuer, requiring only attention to private data, unique to that network.

Estimated annual maintenance / network enhancement lift*

ISO 8583	ISO 20022
500 hours	100 hours
Significant front-end development	Limited front-end changes
Significant back-end development	Limited back-end changes to ensure system can accommodate changes or new values

*Based on Visa DPS estimates of maintenance burden for annual enhancements to VisaNet and other payment networks



ISO 8583 LABOR POOL

Requires expertise
in ISO 8583 format



Many years of
payments experience



Long onboarding
windows for new hires



Cost: \$\$\$



ISO 20022 LABOR POOL

Requires general knowledge
of JSON-based APIs

Can hire developers with little to no
development or payments experience

Up to 80% faster onboarding
than ISO 8583*

Cost: \$\$

Based on Visa DPS estimates for onboarding developers to start coding to the ISO 20022 standard

Developing for the ISO 8583 format requires a longer learning curve, as it requires learning the field mapping coupled with extensive parsing and extracting of data, which can also lead to increased risk of developer errors. With ISO 8583's field structure, data is often spread over multiple fields and sometimes consists of complex combinations of fields and values to indicate certain conditions. ISO 8583's complexity necessitates an extended learning curve and a longer knowledge ramp up for junior developers, and the available talent pool is largely limited to a small group of developers with payments industry experience.

ISO 20022's human-readable format, easily recognized naming conventions and grouped structures enable developers to get up to speed quickly, even when starting with limited knowledge. By using JSON, ISO 20022 allows FIs to recruit from a broader range of developers, including students fresh out of college, and enables shorter onboarding timelines that Visa experts estimate could be as much as 80% faster than ISO 8583 onboarding.

Creating the future of payments

ISO 20022's rich data capacity supports a wide range of benefits, empowering FIs to increase visibility into payments activity, improve performance, reduce risk and increase cross-border interoperability.

But ISO 20022 also makes changing things easier by reducing development cycle times. In short, ISO 20022 allows developers to push code updates faster. This is due partly to JSON's self-documenting, "plain English" nature making data more accessible; partly because making changes doesn't require a cascade of additional coding changes across the entire message payload; and partly because ISO 20022's more "parsable" and extractable messaging format allows FIs to ask for and isolate a single data element for use without needing to ingest every possible field in a full message payload, which can make it easier to support more collaborative use cases.

ISO 20022 helps FIs accelerate speed to market

Richer data, less maintenance, shorter innovation cycles, a human-readable format and easily extractable data elements allow FIs to better support new use cases, collaborate more easily and deliver next-generation payments experiences faster.

Increasing development capacity and operational bandwidth

With this level of flexibility, modularity and limited change (backwards compatibility) of messaging edits, FIs can focus more on developing new solutions and use cases and less on maintenance — allowing them to support agile workflows that can provide more responsive, customer-centric solutions. Add to this the increase in developmental bandwidth that becomes available due to a significant reduction in maintenance burden, and suddenly FIs' internal development environments have the time, resources and developmental capability to work on new payment use cases and invent new capabilities that can address tomorrow's payment challenges.



Market migration to a global, modern standard such as ISO 20022 offers a number of strategic advantages.

Such a standard facilitates interoperability and reduces fragmentation, supports innovation, takes away the limitations baked into legacy standards and allows for cost reduction.

As the payments space continues to innovate, the benefits of ISO 20022's capabilities will only become more obvious – and firms will respond by offering more solutions and services that are ISO 20022-compliant."

Ron van Wezel
Strategic Advisor,
Aite-Novarica Group



Visa DPS delivers the first ISO 20022 Issuer Processing solution in operation

Visa DPS was the first processor to launch a payments solution built on the ISO 20022 standard. As the market leader, DPS has been able to help guide the ongoing development of ISO 20022 message content, and we continue to be actively involved — with multiple Visa architects participating in a range of ISO 20022 technical workgroups.

VISA DPS ISO 20022 API STATISTICS

Both a traditional and leading virtual banking institutions has used the ISO 20022 API interface over the last 18 months, achieving powerful results.

18M API calls per week on average	16M API calls per week over peak season	800M API calls to date	413M transactions process to date
---	---	----------------------------------	---

Reference: DPS ISO 20022 Weekly Operations report

Understanding messaging speeds

Visa DPS Forward performance data shows that message size is a non-factor at fiber optic speeds, even though ISO 20022 message payloads are larger than ISO 8583. The ISO 20022 workgroup is also working to further reduce payload sizes and the complexity of the current payload structure in upcoming releases by flattening and moving objects and key-value pairs (expected with version 4 release).

Preparing for transformation



ISO 20022 adoption will take time, even for FIs with leading technology strategies. FIs should begin planning their adoptions now to ensure a smooth transition. Transformations will need to take place across a number of key aspects of the business: hardware and software systems will likely need to be upgraded; development teams should review resources and ensure they are appropriately staffed to handle conversion; cultural change management initiatives will be needed to help foster a shift to agile, iterative development methodologies; many business units will need new process training, and more. Proper planning will also help FIs develop the scope needed to budget effectively for their adoption.

Visa DPS can help guide your adoption strategy

FIs who bring Visa DPS into their adoption conversations early on can benefit from connecting to Visa's ISO 20022 environment and modern solution set.

FIs can leverage Visa's deep ISO 20022 solution development experience for guidance and support as they build their own ISO 20022 adoption strategies. Visa DPS experts can help FIs understand how to determine what hardware and software investments they should make during their technology transformations. Visa also brings deep implementation experience to the table to help FIs optimize their adoption experiences.



I have firsthand experience in the growth and evolution of ISO 20022 over the last 5 years. I have seen how easy to understand the payloads are, how they can be extended with new data without breaking the payload and how easy ISO 20022 is to maintain once implemented.

Working with our clients and their developers, I find it is simple to code to the new ISO 20022 API interface and to extract just the data that is important to your institution.

Having the rest of the data prepared and ready for future use cases allows for incremental implementation at a pace that is right for your organization.

Kobus Meyer
ISO 20022 Expert & Core Debit Product Manager, Visa DPS

Managing your adoption

There are many different ways to scale growth and capabilities during adoption.

FIs can elect to implement ISO 20022 adoption across their entire business platform all at once, or they can choose to migrate individual payments solutions and business units in a piecemeal fashion. Many FIs may prefer to start small with a piecemeal strategy, allowing them to build and refine their ISO 20022 knowledge and processes, and wait to migrate additional solutions and business units until they're more comfortable with the process. For example, an FI could migrate their credit offerings first, then real-time payments, then debit solutions.

FIs have the flexibility to engage with Visa DPS in a number of different ways. Visa DPS can provide adoption support for the entire process or connect FIs with preferred marketplace partners that can help with ISO 20022 adoption and solution development, allowing FIs to add additional services and support from Visa as needed.



Next steps

- 1** Begin internal reviews to prepare for ISO 20022
 - a. Contact your Visa account executive for a guided walkthrough of the ISO 20022 standard
 - b. Evaluate your internal systems requirements to determine your current capability to switch to ISO 20022
 - c. Evaluate developer expertise to determine if your team can manage the conversion to ISO 20022
 - d. Begin preparing internal teams and business culture for shift to agile methodologies
 - e. Identify budget for adoption
- 2** Reach out to your Visa account executive to bring Visa in during the early planning stages as an expert resource and partner in your adoption conversations
- 3** Stay in touch with your Visa account executive for information on Visa DPS Forward updates and other ISO 20022 resources

Visa DPS Forward can help you accelerate development in ISO 20022

**ISO 20022 will help usher in the future
of payments, but it is just one piece of
the puzzle.**

We've built the Visa DPS Forward system around ISO 20022 at massive scale, and have solutions deployed in the marketplace today. Issuers can save significant time, money and developer bandwidth by implementing Visa DPS Forward — allowing them to reserve key resources for other essential steps in the transformation process.

Visa DPS Forward is available for implementation now for FIs who are ISO 20022-ready. This includes organizations who are able to develop in the ISO 20022 standard and have implemented agile development systems and processes. Onboarding conversations for Visa DPS Forward can happen as soon as FI readiness is achieved.

Now is the right time to engage Visa DPS as a partner on your ISO 20022 journey. Leverage our experience to help streamline your adoption efforts, and then meet with our payments solutions experts to learn more about how Visa DPS Forward can help you hit the ground running and accelerate the future of payments.

Contact your Visa account executive or email us
today at GDLDPSMarketing@visa.com