

Wired to Meet Your Business Needs

The MasterCard Worldwide Network



Your Payment Network Makes a World of Difference

You have a choice in payment networks—and your choice makes a world of difference in your ability to survive and thrive in an ever-changing payment environment. With your risk, reputation—and ultimately your success—inherently tied to it, selecting the right payment network is one of the most pivotal business decisions you will make.

You probably never thought about it—but the architecture of your payment network is much more than a mere technical configuration of endpoints—it actually plays a critical role in your ability to both ensure a rewarding payment experience for your customers and adapt to continually shifting market demands.

“The payment network can’t break down...it is fundamental to our business, and there is no tolerance for failure. It is clearly the most important thing to our customer experience.”

Southwest Asia MasterCard Issuer

Your Payment Network Protects the Payment Experience

As the *lifeline* to the payments system, the payment network binds every party in the payment value chain—enabling the connections for commerce between cardholders, merchants, issuers and acquirers. As a result, you rely on your payment network to protect the payment experience for your customers, knowing that payments are...

- Accepted and guaranteed virtually anywhere in the world
- Facilitated quickly, seamlessly and accurately—every time
- Protected under the strictest compliance guidelines
- Tailored to unique consumer spending needs through value-added payment programs



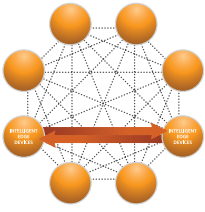

Your Payment Network Drives Your Business Performance

Your payment network is integrally tied to your business performance—providing the foundation you need to...

- **Control operating costs** driven by increasing bank consolidation, globalization and outdated legacy applications that impede your ability to quickly and efficiently expand into new markets, introduce new payments services and address regulatory and customer concerns.
- **Reduce fraud-related costs** driven by increasing fraud attacks and compliance demands that compromise your profitability, reputation and customer satisfaction.
- **Differentiate and grow portfolios** using a customer-centric approach to profitability that demands a comprehensive, individualized view of consumer spending to support cardholder personalization in payment programs.
- **Acquire customers in new markets** leveraging complex, emerging payment alternatives to venture into non-traditional markets and product lines.

Historically, Your Two Choices in Payment Networks May Not Have Always Met Your Needs

Until recently, you only had two options in payment network architectures to address market and customer demands—neither of which may have always addressed your needs in the dynamic payments environment.

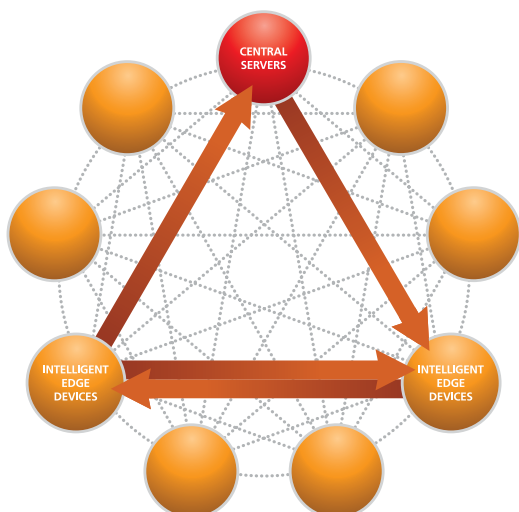
Network Type	Description	Advantages	Limitations
Distributed Network 	Peer-to-peer approach to processing transactions through many distributed processing points	<ul style="list-style-type: none"> • Insulates against system-wide failure • Supports high transaction volumes • Increases network response time • Facilitates customized processing for local markets • Scales efficiently for global expansion 	<ul style="list-style-type: none"> • Prevents immediate availability of transaction data • Limits support of market ready development for value-added payment services
Centralized Network 	Hub-and-spoke approach to processing transactions through a single centralized processing point	<ul style="list-style-type: none"> • Enables immediate access to transaction data • Supports high transaction volumes • Streamlines global deployment of processing services • Supports market ready development of value-added payment services 	<ul style="list-style-type: none"> • Slows network response time • Increases the risk of catastrophic failure

Now You Have a Better Choice in Payment Networks

A one-size-fits-all approach to payment processing can't accommodate the many different types of transactions needed to deliver an efficient and valuable payment experience in today's complex payments environment. Recognizing the diverse and changing needs of transactions, MasterCard evolved its network architecture to leverage the complementary strengths of distributed and centralized architectures—effectively eliminating the limitations of both.

The MasterCard Worldwide Network

A unique new architecture that **seamlessly blends distributed and centralized processing to provide the only integrated, intelligent and innovative payment network in the industry.**



Intelligent Edge processors connect customers to the MasterCard network. During authorization, the Intelligent Edge processor evaluates each transaction to determine the optimal processing route.

Distributed Processing

For quick-service transactions that require the *fastest processing* close to where the transaction occurred, the Intelligent Edge processors route the transaction *directly* to the receiving bank with no intervening routes.

Centralized Processing

For *high-value* or special transactions that require *value-added processing* for added security or customization, the Intelligent Edge processors route the transaction to the central server *before* routing it to the receiving bank.

Integrated for Global Scalability and Local Flexibility

The MasterCard Worldwide Network is the **ONLY globally integrated payment network** in the industry—seamlessly connecting more than 24,000 financial institutions and 28 million acceptance locations in over 210 countries.

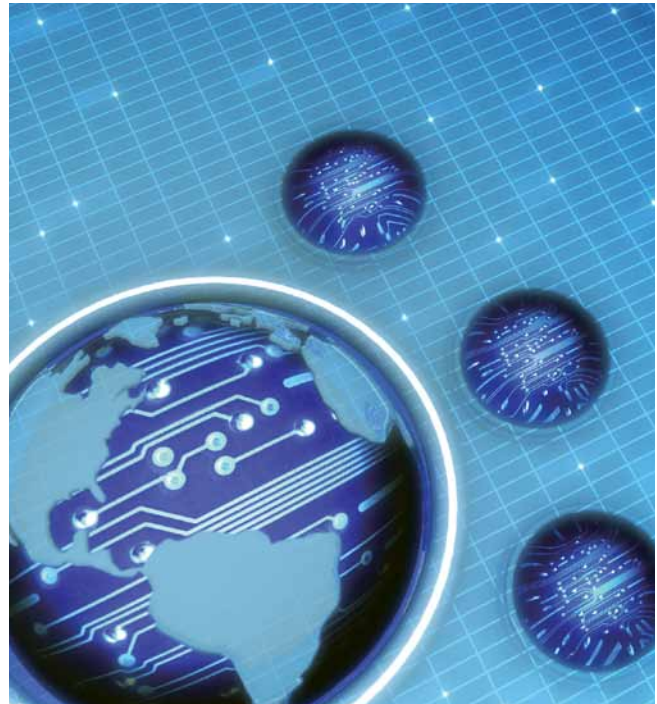
“Only MasterCard has a coherent global payment network with a single delivery system. This matters enormously...in an era of globalization. They will have an easier time tailoring genuinely global propositions. In addition, MasterCard can more flexibly engage and deploy customized processing nodes with particular clients and/or national markets.”

Eric Grover
Industry Analyst and Principal, Intrepid Ventures
“A Tale of Two IPOs,” The Deal.com
March 4, 2008

Unlimited Scalability for Efficient, Interoperable Expansion

As a global or multinational customer, you can grow with the MasterCard network to...

- Quickly and efficiently scale network processing by distributing Intelligent Edge processors instead of leveraging more costly centralized data centers in new markets.
- Ensure a consistent footprint in every market, utilizing the MasterCard network's global processing configuration as well as common message formats and network protocols to manage payment processing.
- Reduce redundant network costs in development and maintenance by leveraging a consolidated processing platform.



Only MasterCard manages a globally integrated network of **over 1200 Intelligent Edge processors**—co-located with customer host systems—that connect customers to the MasterCard network with unlimited **bandwidth-on-demand** for efficient, interoperable expansion in virtually every market around the world.

Unmatched Access to Global Transaction Data for a Comprehensive View of Spending

When you have consumers in many markets, the MasterCard network enables access to global transaction data through an integrated processing interface so you can...

- Differentiate card programs in market by targeting marketing programs precisely to consumer spending preferences and behaviors.
- Improve the consumer spending experience with tailored payment programs.
- Determine the most profitable new markets to explore.

Only MasterCard captures transaction data through an integrated network—providing a **single, comprehensive view of consumer spending** across multiple regions, markets and platforms.

MasterCard is recognized for industry-leading, patented data management through its Data Warehouse.

Unrivaled Flexibility for Processing Customized to Market Needs

The MasterCard network enables you to manage payment processing country by country to...

- Leverage existing MasterCard processing connections for both cross border and domestic transactions.
- Maintain control over operations based on local market needs while leveraging the best practices of MasterCard's global franchise and network.
- Leverage distributed processing at the Intelligent Edge to customize financial and processing arrangements unique to local market needs for business practices, regulations, operational formats, languages, currencies, time zones and more.

Only MasterCard provides highly configurable **parameter-driven customization**—assigning characteristics to accounts and products on demand without changing the underlying application code—for significant savings in development, speed to market and precision in product segmentation.

CASE STUDY

The MasterCard Network Delivers Streamlined Processing for Brazil

The Opportunity

Credicard and other Brazilian issuers needed to streamline domestic and international processing platforms that were unreliable, inefficient and costly while also enhancing Brazilian settlement for unique payment types.

The Approach

Credicard and other Brazilian issuers shifted transaction processing from outdated domestic platforms to the global MasterCard network—further customizing the MasterCard network to accommodate unique payment types in Brazil.

The Results

Credicard and other Brazilian issuers realized:

- Economies of scale to process domestic and international transactions through a single global network.
- Enhanced security and availability to process over 24 million additional transactions annually.

Brazilian acquirer Redecard realized:

- Annual savings of R\$2.6MM (\$1MM USD) in float.
- Expanded disaster recovery support, avoiding a multimillion-dollar investment in a contingency site.

Intelligent for High-Performing Payment Processing

The MasterCard Worldwide Network is the **ONLY intelligent payment network** in the industry that dynamically adapts to the unique processing needs of each transaction—seamlessly blending the speed and reliability of a distributed network with the real-time availability and cardholder-level processing of a centralized network.

Unparalleled Speed for Quick-Service Payment Processing

The MasterCard network, with its distributed architecture, is uniquely positioned to process low-value payments such as quick-service restaurant and mass transit transactions that require the utmost processing speed. Because each transmission consumes valuable processing time, the MasterCard network utilizes the fewest transmissions for faster processing, enabling...

- Issuers to employ real-time value-added services at the POI without compromising speed of response.
- Acquirers to save on bandwidth costs with higher throughput of transactions at the POI.
- Merchants to move more consumers through checkout lines to optimize sales.
- Cardholders to enjoy a fast, convenient payment experience.

“MasterCard’s integrated global ‘intelligent network’ enables superior service to financial institution customers as transactions can be routed to either maximize processing speed or provide specialized, value-added processing, depending on which is more beneficial to the customer and cardholder.”

David Hochstim & Yanni Koulouriotis
Buckingham Research Group
April 2009

Only MasterCard operates **the fastest payment network—more than twice as fast as other networks**—often processing transactions at the Intelligent Edge located no more than a cable’s length away from customer host systems.

CASE STUDY

The MasterCard Network Delivers Speed and Convenience for the New York MTA

The Opportunity

The New York Metropolitan Transportation Authority (MTA) needed faster, easier turnstile access to address a changing consumer environment within the New York subway system.

The Approach

MasterCard piloted *PayPass* contactless cards processed through the MasterCard network—selected over other networks as the only one fast enough—at an average processing speed of 140 milliseconds to process transactions for the quick-service transit environment.

The Results

MasterCard helped to:

- Improve the consumer transit experience while using the New York MTA through speed, convenience and enhanced security of the *PayPass* device and fast MasterCard network.
- Save issuers and merchants time and money using the scalable, interoperable MasterCard network for all mass transit riders and multiple modes of transportation.

Unsurpassed Reliability to Protect the Payment Experience

MasterCard's industry-leading operational resiliency practices deliver business continuity for every constituent in the payment value chain—guaranteeing that MasterCard cards will work anywhere, anytime and every time. To uphold this promise, MasterCard structures tri-**dundant** monitoring throughout its network to ensure the highest quality and fewest dropped transactions at every point of vulnerability with...

- Intelligent Edge processors distributed around the world that provide fail-safe local diagnostics and monitoring closer to customer host systems to ensure minimal points of failure in the event of a **network** outage.
- Stand-In processing at the Central Server when the **issuer** is unable to communicate with the MasterCard network.
- X-Code processing at the Intelligent Edge when the **acquirer** is unable to communicate with the MasterCard network or when the network cannot communicate with the acquirer's Intelligent Edge processor.

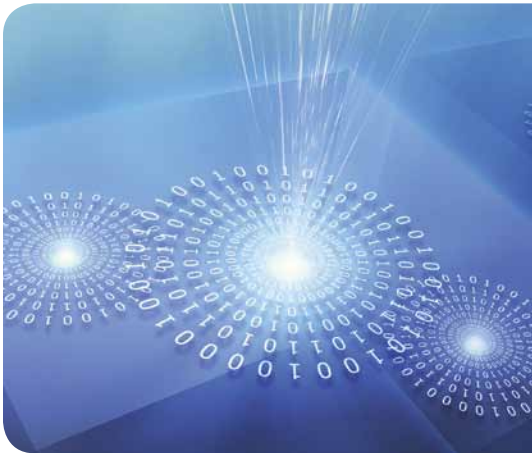
Advanced Processing for Greater Precision at the POI

The centralized architecture of the MasterCard network supports advanced payment services that require real-time control and cardholder-level customization at the point of interaction, enabling you to...

- Access transaction data immediately during authorization to support payment services that require real-time evaluation at the POI such as fraud scoring, instant rewards and more.
- Differentiate payment services at the individual cardholder level, providing greater personalization at the POI for consumer spending controls, high-transactor rewards, migration between card products and more.

"MasterCard enables precise cardholder-level processing—advancing the standard one-size-fits-all card product to be more flexible and user-friendly. Other card networks should move in this direction."

Gwenn Bezar, Aite Group
"Top Ten Tech Companies to Watch"
Bank Technology News
May 2009



Only MasterCard sets the standard in business continuity with redundancy at all three points of vulnerability in payment processing—the issuer, the acquirer and the payment network—providing **tri-*dundant***, or multiple routing paths at each point, for **triple-layer protection** against network outages. MasterCard protects your revenue and customer satisfaction by saving millions of transactions each year that would be declined on other networks.

As a result, MasterCard has been recognized four times with the **HP Non-Stop Availability Award** for highest system uptime and best outage prevention strategies.

Innovative for Value-Added and Market Ready Payment Solutions

The MasterCard Worldwide Network is the **ONLY innovative payment network** in the industry with best-in-class value-added **and** market ready processing solutions that extend your value across the payments chain.

Unequaled Selection of Value-Added Payment Solutions Throughout the Value Chain

MasterCard continually evolves its payment network to accommodate new and emerging ways to pay through innovations borne of evolving technology and consumer preferences. Processing through the MasterCard network gives you access to a robust suite of value-added payment processing solutions that help you to...

- Streamline operating efficiency to automate manual back-office processes and facilitate easier maintenance of financial and processing arrangements.
- Customize payment programs to unique cardholder preferences, risk profiles and operating parameters.
- Extend payment programs into non-traditional, emerging or underserved markets that can gain economic efficiency, financial inclusion and convenience from electronic payments.

Only MasterCard customers who process transactions on the MasterCard network gain access to an **innovative and often exclusive menu of payment solutions** that help grow their business throughout the payment chain, such as:

- Fraud Management
- Information Analytics
- Debit Processing
- Chargeback Processing
- Business/Settlement Services
- Mobile Payments
- Electronic Bill Payments
- Money Transfers

Unprecedented Approach to Smart Sourcing Market Ready Payment Solutions

MasterCard provides smart sourcing—a smarter, more cost-effective approach versus using in-house or third-party processor development. Smart sourcing through the MasterCard network reduces your development investment, time to market and risk with market ready payment solutions that help you to...

- Enhance the ease, speed and scale of your product development using MasterCard's modular technologies that integrate easily into your operating systems for you to assemble and reuse across your business lines.
- Improve operating efficiency by enhancing outdated legacy applications without redesigning or radically changing your operating systems.
- Quickly and efficiently address increasing market and regulatory demands that can sap your development budget and resources.
- Differentiate products from competitors by bringing advanced, leading-edge payment solutions to market.

Only MasterCard offers smart sourcing of processing operations—enabling you to outsource key business processes to your payment network instead of developing them in-house or outsourcing discrete application functions through multiple third-party providers. Smart sourcing provides access to **market ready payment solutions** such as:

- inControl Solutions
- Expert Monitoring Solutions
- Card Security Services
- Loyalty and Rewards Services
- Gateway Routing Services

The MasterCard Network Delivers a Market Ready Bridge to Chip Compliance for North American Issuer

The Opportunity

A large North American issuer wanted to participate in the market migration to chip, but in-house systems were not ready in time to handle full-grade chip transactions during the pilot period.

The Approach

MasterCard provided M/Chip Market Ready Services as a bridge to handle chip transactions while the bank worked to ready its platforms for chip compliance.

The Results

The issuer was able to:

- Put chip rollout on the fast track with its current authorization system unchanged.
- Remain competitive by issuing chip cards before the pilot.
- Focus on upgrading their in-house system—relying on MasterCard until chip compliant.

A Smarter Model for Product Development

Before, there were only two ways to expand product offerings...build or buy. Now, with the MasterCard Smart Sourcing model, you can quickly customize products and meet market demand with less investment and risk.

Criteria	Issuer In-House Model	MasterCard Smart Sourcing Model
Cost	Significant development and startup investment	Low-cost development with no startup investment required
Scalability/ Customization	Costly, inefficient scalability and customization of product features	Pay-as-you-go approach to scale and customize product features without additional costs
Implementation	High implementation risk	Low implementation risk
Time-to-Market	Longer cycle time-to-market	Shorter cycle time-to-market
Integration	Multi-provider incompatibility	Mass-market customization integrated through a single global platform
Resources	Resource intensive	Processor independent; leverage payment network resources

All Payment Networks Are Not Created Equal

Your payment network can strengthen or limit your ability to quickly and cost-effectively accommodate business-as-usual as well as emerging payment trends or market demands. That's why MasterCard continually invests in its payment network—ensuring it is wired to meet all of your business needs.

Is your payment network wired to support the demands of your business?

When you need to...	To address business drivers of...	Your payment network must provide...	Centralized Network	Distributed Network	The MasterCard Network
Control Your Operating Costs	Bank Consolidation and Globalization	Scale to efficiently expand processing across regional and global markets		✓	✓
		Flexibility to customize processing for local markets		✓	✓
		An integrated view of payments across products, channels and markets		✓	✓
		A central processing platform to customize and deploy payment services	✓		✓
		Fail-safe processing that enables greater focus on business demands		✓	✓
		Access to value-added payment solutions that enhance core operating system efficiency	✓		✓
Reduce Your Fraud-Related Costs	Fraud Management/Regulatory Compliance	An integrated view of payments across products, channels and markets		✓	✓
		Immediate access to transaction data for real-time evaluation at the POI	✓		✓
Differentiate and Grow Your Portfolios	Drive Toward Customer Profitability	Cardholder-level processing for personalization of cardholder payment programs	✓		✓
		An integrated view of payments across products, channels and markets		✓	✓
Acquire Customers in New Markets	Emerging Payment Technologies and Markets	Access to market ready payment services for reduced investment, risk and time to market	✓		✓
		Maximum processing speed to penetrate low-value, quick-service retail environments		✓	✓

Plug into the MasterCard Worldwide Network

The MasterCard Network Is Your Connection to...

Unrivaled integration...

The ONLY fully integrated payment network for global scalability and local flexibility.

Unparalleled intelligence...

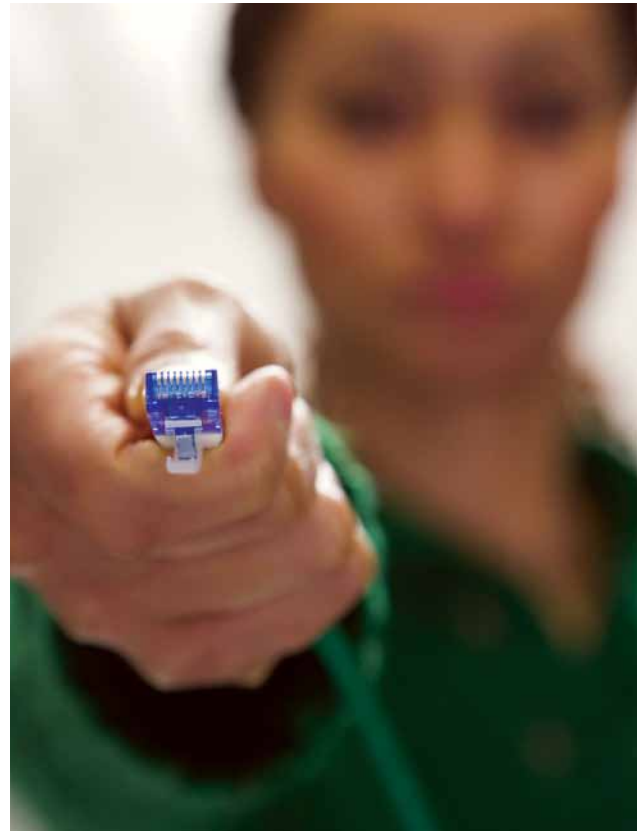
The ONLY high-performing payment network that seamlessly blends a distributed and centralized architecture to deliver the fastest, most reliable and advanced payment processing.

Unprecedented innovation...

The ONLY innovative payment network that enables access to leading-edge valued-added payment solutions as well as smart sourcing of market ready payment technologies.

For More Information

To learn more about how processing through the MasterCard Worldwide Network can help support the demands of your business, contact your MasterCard Customer Representative or Technology Account Manager.



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