Technology-led shifts and opportunities in card-based payments

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Payments are the lifeblood of today's global economy. Issuers, networks, payments processors, and merchant acquirers are investing heavily to retool their payments systems, capitalizing on several advances in technology to better align with customer preferences and sector-specific business requirements.

Disruption and innovation in payments technology are ongoing. Real-time payments are already commonplace in many geographies. Point-of-sale lending and buy-now-pay-later financing solutions are reimagining lending and upending the POS experience. Tap or scan-to-pay solutions such as Apple Pay, Google Pay, and QR codes continue to grow. And as digital commerce accounts for a greater share of spending cash is further displaced.

Recognizing these changes and challenges, established banks and payments processors are pursuing modernization of three elements of legacy payments technology:

1. **Infrastructure and deployments** (e.g., data, switching, a system of record, tokenization)
2. **Middleware ecosystem** (e.g., routing, analytics, risk, authorization, instruments)
3. **Front-end channels and execution systems** (e.g., customer experience/user interface, distributed point-of-sale solutions, financial wellness)

Almost 10 years ago, PayPal was processing more than $350 billion in payments annually. Advances in open-source technology, decentralization, and cloud computing have since enabled flexibility and on-demand capacity provisioning, paving the way for fintechs like Adyen, Stripe, and Square to disrupt the space. We have now entered an era of "financial functions as a service"/"container as a service" paradigms.

Ultimately, we expect a fully automated and optimized "payments as a service" (PaaS) future state, in which payments functions such as on-demand tokenization, routing, and stand-ins are codified as separate functions, assembled and extended in a Lego-like fashion to offer superior customer and cardholder experience. One current example is Apple's payment wheel. Further, PaaS can foster a personalized end-to-end experience including dynamic CVV, token swapping, and backward compatibility.

But, incumbent providers should address four core questions before embarking on the payments architecture modernization journey:

1. Does our existing infrastructure and platform architecture enable the efficient extension of payments services, the rollout of innovations, and the achievement of processing scale and efficiencies?
2. Can our platform decouple legacy workflows, augmenting them with new workflows powered by blockchain, deep learning, and IoT?
3. Will the modern architecture, operating model, and business strategy operate and scale across established open standards (e.g., ISO 20022, BIAN7) and connect to next-generation third parties such as digital currency marketplaces?
4. Can our current infrastructure adapt to regulatory and institutional changes in the next few years in response to new initiatives (e.g., real-time payments, new messaging standards, more stringent requirements governing risk, fraud, and privacy)?

In summary, new technologies are opening the way for innovation in payments; to take full advantage, payments providers need to modernize three elements of their legacy technology.

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