PAYMENT SYSTEMS MODERNIZATION FOR PRODUCTS AND EXPERIENCE INNOVATION AT SPEED AND SCALE

Progressive Modernization Approach for Small and Mid-Sized Banks

The payments business has been facing significant changes over the last few years.

Technology, competition, regulators, and customers continue to raise the benchmark. While players have been responding to the challenge, the ability to respond at speed and scale has been a challenge. While large banks continue to invest in refresh and renewal, mid-sized banks have managed to stay in the game via tactical enhancements.

However, we foresee a 'tipping point' where mid-sized banks must modernize/ upgrade their payment systems to ensure they drive experience, product innovations, and are not held back by legacy systems.

Capgemini is pleased to present this report where Everest Group lays out the payments innovation agenda along with the challenges and best practices for payments IT modernization. As mid-sized banks embark on their modernization journey, it is key to build a target state vision for payments technology landscape and drive internal alignment between business and technology.

This report covers:

- Key market drivers of payments IT modernization
- Payments innovation opportunities and perspectives for mid-sized banks to build the business case
- Risks and benefits of two alternate approaches i.e. Big-bang and progressive
- Challenges and best practices for banks to consider on their modernization journey

At Capgemini, we are committed to helping banks rise to the payments challenge. We work with a range of banks and payment service providers to help define and deliver their transformation programs. With the right set of experience, capabilities, and a robust ecosystem of partners, we help banks to capture opportunities in the payments market.

I hope these insights will guide you in your payments transformation journey.

Jeroen Holscher
Global Head - Cards & Payments Practice Capgemini

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Payment Systems Modernization for Products and Experience Innovation at Speed and Scale

Progressive Modernization Approach for Small and Mid-Sized Banks

Ronak Doshi, Partner
Kriti Gupta, Senior Analyst
Japshabad Suri, Analyst

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Introduction

Rising demand for real-time, accessible, and digital-first payments experiences that integrate seamlessly to support business and lifestyle needs is causing an inflection point for banks' payments operations and technology strategies. A digital payments infrastructure that enables trusted and secure payments experiences is vital for banks that are supporting organizations across industries as they increasingly pivot to digital business models. This need is especially critical as businesses are looking to orchestrate seamless, fully personalized customer experiences that include integrated payments.

Banks and payment firms face rising competitive intensity from BigTechs and FinTechs as they increasingly enter the payments space, which – among other things – has resulted in downward pressure on transaction fees, such as merchant service charges, and upward pressure on cost to acquire and retain customers. As a result, banks' payments businesses' operating margins are declining. BigTechs such as Google, Facebook, Apple, and Amazon, ride-sharing leaders such as Uber and Grab, and Point of Sale (POS) financing and FinTechs such as MTN, PayPal, and Venmo, are driving changes in customer behaviors and changing the value creation equation by innovating payments products and user experiences.

It is growing more difficult for banks with traditional systems to manage compliance and governance given the increasingly complex regulatory environment (with the advent of ISO20022), the need to manage the cost of compliance, and the emergence of cryptocurrency in the form of Central Bank Digital Currencies (CBDCs) and digital assets for both transactional and speculative purposes; managing these demands requires a completely revived payments capabilities payments network.

This dynamic situation requires banks to take a more strategic and innovative approach to unlocking more value from their payment systems. They can either continue to add surround layers to their traditional systems or incrementally modernize their core to be future-ready. Adding surround layers to core systems to speed product launches will result in additional technology debt and operational complexity, negatively impacting competitive positioning, and make updates necessary in a few years. Instead, banks should build a target state vision for their payments systems and drive internal alignment between the business and technology teams to undertake this journey in a stepped manner and at a sequence and speed that are mutually beneficial.

Banks taking this route need to address several questions: sequence and approach to modernization, selection of best-in-class technology components, and how to design a data and IT infrastructure roadmap that leverages the benefits of cloud technology, among others. In this research, we explore the changing market drivers and approaches to modernization in the payments industry and discuss modernization challenges and best practices for small and medium banks.

Payment products and experience innovation

Everest Group estimates that global non-cash transactions grew by 14% in value in 2019, the highest in one-year growth of the decade, with APAC leading the way. Since then, increased digital adoption and the forced use of contactless payments due to COVID-19 have further driven up the use of non-cash transactions. This rise in payments volume taken together with declining transaction fees, evolving customer demands, increasing competition from new players, and the rapidly changing regulatory landscape, are compelling traditional banks to innovate their payment products at speed and scale to retain, much less gain, market share.

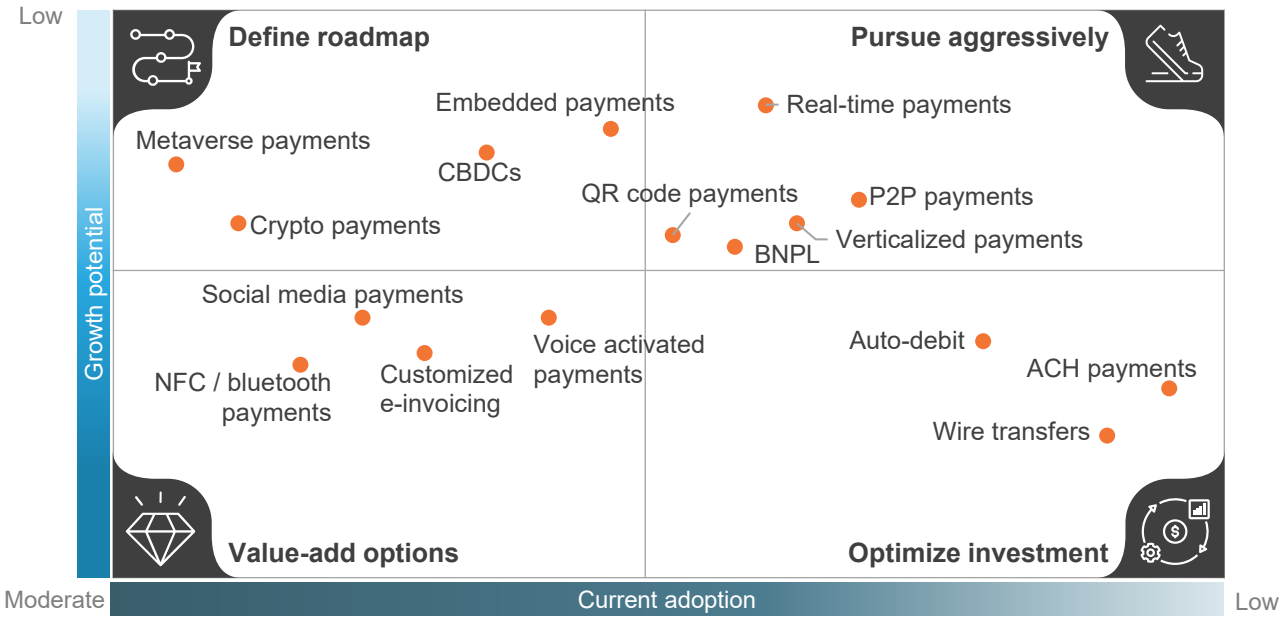
And there are any number of potential innovations a bank can undertake, from enabling Buy Now Pay Later (BNPL), to cryptocurrency-based payments, to launching Real-Time Payment (RTP) offerings, to Alternative Payment Methods (APMs), banks have a veritable smorgasbord of alternative monetization channels to choose from.

However, with this multitude of emerging options and limited investment budgets, banks need to prioritize their payment products investments based on customer adoption trends and growth potential and build a playbook for each product in their portfolio. One way to organize thinking around options is to plot payment products on a "growth versus adoption" matrix, such as Exhibit 1, and as explained below.

EXHIBIT 1

Payment products innovation – current adoption and future growth potential

Source: Everest Group (2022)



Define roadmap

Payment products that have high growth potential over the next three to five years require investments in driving awareness and adoption, shaping consumer behavior, responding in an agile manner to market dynamics, and carefully defining the product strategy roadmap. Alternative payment methods such as cryptocurrencies and digital tokens or emerging channels for payments such as IoT-based payments or payments in metaverse lack regulatory clarity and industry standards. Thus, banks need to define a roadmap and gain buy-in from the ecosystem to quickly scale adoption as well as to influence consumer behavior. All these products are digital-first payments products that require the application of digital technologies such as AI, AR/VR, blockchain, and IoT in synergy with the payments technology stack. Legacy payment processing engines and systems slow the roll-out of these products, creating a strong case for IT systems modernization.

Pursue aggressively

For the payments products in the pursue aggressively quadrant, banks need to make continual experience and channel innovation investments, as adoption is exploding, and competition for market share is intense. FinTechs such as Klarna, Laybuy, and Clearpay offer interest free credit through partnerships with leading e-commerce platforms. Such channel innovation ensures products such as BNPL are accessible to customers at the point of need. The credit decision engine needs to make real-time financing decisions using data sources such as historical transaction data and credit ratings.

As part of their verticalized payments solutions, banks are building customized payments experiences for each industry segment. This contextualization requires an understanding of the unique needs of businesses and business owners; the data needed to design these unique experiences is critical to success. Another key area of focus for banks should be to facilitate Real Time Payments (RTP). RTP has seen massive adoption over the last decade; with modern RTP programs being launched across major economies. RTP success for banks and payment firms lies in defining end-to-end payments experiences through the customer-preferred network in a cost-effective, compliant, and secure manner.

Value-add options

Banks will have to invest in value-add services that drive differentiation in the payments experience. The preferences for these value-added services or conveniences will be region-specific and customer-segment specific. These value-added services have historically moved from being unique to must-have features and thus need continuous innovation to differentiate.

Optimize investment

Payment products that have high adoption, but moderate future potential will see consolidation as economies of scale will enable banks to manage profitability pressure. Given the underlying legacy systems that support wire transfers, banks can explore the adoption of wire processing as a service on cloud. This movement to a platform approach and leveraging APIs for better connectivity will introduce resiliency and future-proof the wire transfers business.

Navigating the rapidly evolving payments landscape

The payments industry is undergoing a drastic shift as different types of payment products and themes gain traction. To enable a seamless move to newer payment types and products, the underlying messaging standard needs to evolve as well. Currently, SWIFT messages and other legacy formats carry limited data and make interoperability difficult. It is the ability of data to move along with payments that will enable more types of payments.

As a result, ISO20022 was introduced as the open standard for payments with the goal of standardizing and simplifying inter-bank communication, especially for international payments, by setting a single messaging language across all transactions and geographies. It has opened avenues for banking firms to monetize the vast amount of data resident in their systems through partnerships with insurers, lending organizations, and investment banks. Complying with the ISO20022 standard will also allow banks to easily offer other value-add services such hyper-personalization and data analytics and automation by capitalizing on the streamlined data. In addition to ISO20022, the payments industry is challenged to comply with a mix of other global and regional regulations. The Financial Services Act 2021 is a key initiative the UK that the government has taken to regulate its banking industry following Brexit. Similarly, alternative payment methods such as cryptocurrencies and digital tokens are facing increased regulatory scrutiny around the globe. Another area where we see both local and global authorities periodically issuing new directives/regulations is on Anti Money Laundering (AML) to combat financial crimes.

The rapidly evolving nature of these regulations requires banks' IT systems to be configurable and agile to facilitate easier and faster compliance. With SWIFT announcing a global phased migration from current message type/texts to ISO20022 through 2025, banks need to quickly draft roadmaps for smooth compliance

Most of the banks are currently using legacy codes, disparate systems, and siloed databases for payment services. Banks need to overcome these challenges to ensure interoperability across payments and become ISO20022-ready. While larger banks have the scale and technology budgets to maintain in-house talent and drive their modernization journeys, mid-sized and small banks have neither the budgets nor the size the larger organizations enjoy. Hence, partnering with service providers and capitalizing on their technology and scale of expertise to ensure IS020022 compliance is good choice for these banks. However, identifying the right set of partners in the ecosystem alone is not sufficient. Mid-sized and small banks need to understand the different approaches to modernizing their payment systems as well, as there are multiple approaches banks can take to modernization based on their unique differences, challenges, and strategic priorities.

Payment modernization for banks – the way forward

Legacy technology and siloed data are two major challenges for banks in accelerating and scaling their payments product transformation and experience innovation. These challenges constrict enterprises, making it difficult for them to flex to changing demands and regulatory

which, in turn, slows time-to-market, increases complexity in establishing workflows, and limits access to data that can be used for product building/testing and analytics to drive operational efficiencies.

Furthermore, transaction monitoring in these legacy environments is often inconsistent and fragmented. This inability to monitor transactions in real time can lead to compliance issues, which harms banks' reputations, damages customers trust, and results in sanctions and fines. Many of these penalties in the last 18 months, were related to the lack of proper risk and compliance system, the inability to detect and prevent fraudulent transactions, and inadequate or delayed incident reporting. Thus, banks must identify and act upon any emerging risks that may not be effectively addressed in their current regulatory frameworks and legacy systems.

Moreover, it is not only the limited capabilities of the legacy systems that challenge banks but also the added financial and human resource commitment needed to run these systems. The skill sets needed to manage and operate traditional core systems demand are fading, thus requiring significant IT expenditure just to maintain/update these outdated tech stacks.

Finally, the growing emergence of BigTechs and FinTechs in the payments industry is a threat to incumbents. These competitors are cloud-first, with open architectures and API capabilities, sophisticated analytics, data management, and cybersecurity features. This modern system infrastructure allows them to be flexible, change offerings based on customer need, speed time to market, adapt more quickly to new regulations, reduce operating costs, and easily offer value-added services such as backtracking, expense management, and seamless invoicing due to interoperability, all of which enables them to operate much more efficiently than traditional banks.

While modernizing the core payments system is clearly essential to long-term survival, it is a complex exercise, so fear of operational disruption holds CIOs back from modernizing. To overcome this concern, banks can consider two options: completely overhaul the core in one go (big-bang approach) or take an incremental approach, adding modern systems in phases.

Big-bang end-to-end platform implementation

The goal of the big-bang approach is to rip and replace the legacy system with a new end-to-end platform built from the ground up. Banks operating on legacy-built applications that have not been improved meaningfully usually consider this approach, as they need to replace their entire system in one go. However, this approach comes with significant risks and disadvantages – it tends to be costly, time-consuming, and disruptive to the business.

Incremental modernization

In this approach, banks identify specific areas that require modernization and then create a roadmap to modernize systems progressively, based on priority. The key elements that make this approach successful are the adoption of a composable and microservices-based architecture with advanced integration technologies and a cloud-native mindset.

Many large organizations, ranging from central banks and scheme operators to retail banks, have announced modernization efforts in the past five years, with each adopting a

different approach. For example, Bank of England and Texas-based Vantage Bank have decided to migrate from their core settlement systems to a modern architecture with a big bang approach, while State Bank of India (SBI) and Sweden-based Länsförsäkringar Bank have adopted a phased approach.

While a big-bang implementation involves a greater risk and a higher investment, the benefit is that it increases the systems' capabilities to be flexible and fast at a much larger scale than the incremental approach. The benefit of the incremental modernization approach is that it allows banks to be flexible with releases, partner with multiple vendors, and avoid the risk of organization-wide failure. It also gives banks greater control over their modernization journeys and enables them to demonstrate value to stakeholders early on by targeting quick wins – it enables banks to introduce new payment products within months of kicking off the modernization effort and continually adding incremental features and functionalities.

Given their scale, the incremental approach to transformation is generally best for small and mid-sized banks. This approach reduces reliance on the legacy core platform and enables banks to wrap the core with modular digital components. By building extensions of core to expose the APIs, this iterative procedure helps convert the monolithic architecture to a microservices-based one. Additionally, deploying on the cloud provides flexibility to scale capacity depending on transaction volume.

Exhibit 2 offers additional details on the risks and benefits of the two approaches.

EXHIBIT 2

Risks and benefits of alternative modernization approaches

Source: Everest Group (2022)

Approach	Big-bang implementation	Incremental modernization
Description	• Replacing the current platform and the value-add overlays all at once with an end-to-end platform Higher risk due to data migration challenges and low control over the modernization process • Involves high up-front investment and vendor lock-in across technology infrastructure, product, development, and operations	• Modernizing parts of the current platform with features and functionalities in phases • Greater control and flexibility to prioritize specific releases within months with lower risk of migration • Allows centralized administration using the same vendor platform to support additional products and regulatory needs
Timeline	4-7 years	2-7 years
Cost	High	Moderate
Dependence on external provider	High	High
Alternatives	Choose a service provider to modernize and operate the payment system to convert the up-front cost of modernization to an as-a-service model	SaaS model from a white-label product vendor

Conclusion and recommendations for modernization

With legacy systems, multiple layers of capabilities built on top them, and limited budget to upgrade, small and mid-sized banks, have largely not shifted to modern payment systems and are suffering as a result. Caught between large banks with large technology budgets and FinTechs built on nimble cloud systems that are disrupting the traditional market, these smaller institutions are struggling to compete. These Frankenstein legacy systems are, in turn, slowing integration with RTP and other alternate payment networks for small and mid-sized banks.

As these small and mid-sized banks explore the incremental modernization approach, they should also revamp front office systems to improve stakeholder experiences, explore off-the-shelf payments technologies, and analyze cloud-readiness among technology providers

Leveraging next-generation digital technologies to streamline various payment processes and make data-driven decisions has also become essential for operational resilience. AI/ML and big-data analytics have been the clear investment choices to reduce spending, boost security and reap additional benefits as outlined in Exhibit 3.

EXHIBIT 3

Benefits of using next-generation technologies in payments

Source: Everest Group (2022)

Reduced risk of fraud as consumers gravitate to more digital payments: As more customers adopt digital payments for day-to-day transactions, protecting them from risk and fraudulent activities is critically important.

Shift from fraud detection to fraud prediction and prevention: With real-time payments gaining traction, risk assessment and instant transaction authentication have become more important as the time window for analysis has shrunk drastically and new fraud has been rising.

Better and faster decision-making: The rise of digital transactions has resulted in the explosion of payments data variety and volume. With multiple payment options available for gateways and banks, it is essential to optimize decision-making to improve success rates and margins.

Ability to offer personalized products and services: ML-based analytical solutions enable better personalization with recommendations and offers based on customer segments and transaction behavior.

As small and mid-sized banks face the triple mandate to meet customer requirements, comply with emerging payment regulations, and control costs, they should keep several things in mind in their modernization journey:

- **Scale pragmatic digital-for-efficiency initiatives to reduce the cost of operations**
  Adoption of AI/ML, cloud, and APIs in payments transformation will enable banks to scale, reduce per-transaction IT operations costs, and minimize exposure to regulatory penalties
- **Build products/experiences to adapt to changed payments behaviors and evolving expectations**
  Take a partnership-led approach with the wider financial services and technology vendor ecosystem to offer value-added services on top of traditional payments processing
- **Invest early to capture share of high growth APMs and the emerging CBDC landscape**
  Compete with APMs offered by FinTechs and support technologies such as DLT to enable CBDC and cryptocurrency-based payments
- **Navigate tightening regulations and growing security challenges**
  Banks should carefully scope out their compliance needs and build/acquire the right talent with domain and technical expertise
- **Take advantage of the rich payment technology supplier ecosystem**
  Partner with payment technology vendors that are investing in innovative point solutions to enable banking firms integrate digital technologies for modern payments offerings

In addition to improving processes and technologies, small and mid-sized banks need to understand that the ultimate success of their efforts will hinge on successful collaboration and partnership among business, IT, and ecosystem players. The payments industry is undergoing radical changes, with a consequent rise in demand for core modernization and third-party payments technology. Enabling real-time payments and supporting alternate payments are vital to winning market share. Shifting to an open API-based architecture and adhering to the ISO 20022 payments messaging standard will allow banks to capture rich and structured data.

These initiatives will help improve customers' payment experiences. From an operational efficiency perspective, adopting new processing systems will support smarter regulatory compliance, drive innovative product development, accelerate time to market, and improve analytics. Embarking on this journey with a well-defined roadmap will help small and mid-sized banks serve changing customer demand and realize their growth objectives.

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For more information about Everest Group, please contact:

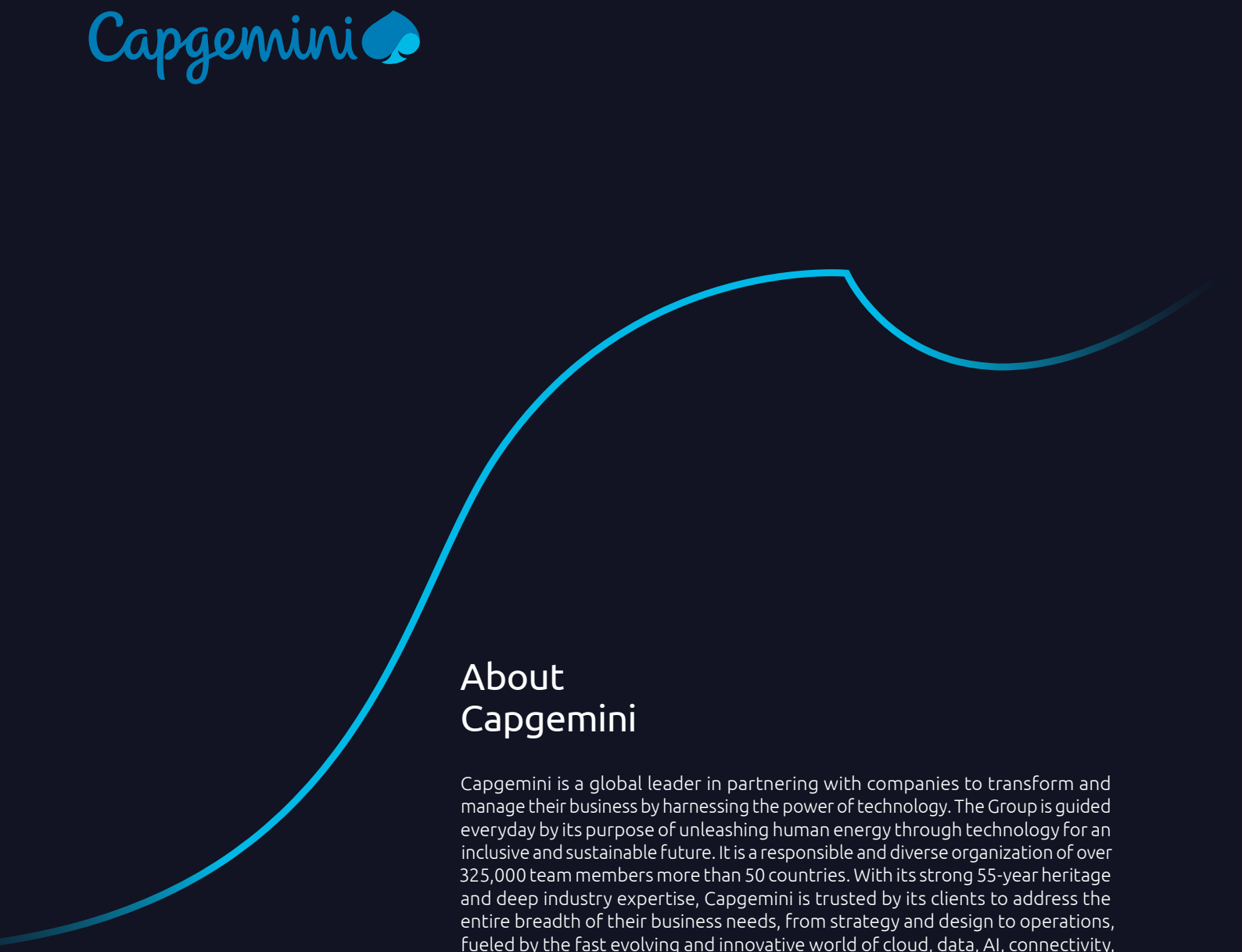
+1-214-451-3000
info@everestgrp.com

For more information about this topic please contact the author(s):

Ronak Doshi, Partner
ronak.doshi@everestgrp.com

Kriti Gupta, Senior Analyst
kriti.gupta@everestgrp.com

Japshabad Suri, Analyst
japshabad.suri@everestgrp.com



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