Whitepaper: Celent + Earnix

Competing and Capturing Customers in a Disrupted Auto Finance Market

The Importance of Flexible Loan Pricing Technology to Compete in Tomorrow's Vehicle Finance Market

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Welcome

New pricing and decisioning technology helps auto lenders improve product pricing, accelerates the speed of processing, and reduces overall costs to create a more modern, digital-first vehicle finance business.

The auto finance world has witnessed major shifts in the past few years. For example, the immediate impact of the pandemic on the sales of new and used vehicles, supply chain disruptions, and the rapid increase in inflation and funding rates of 2022 all exacerbated underlying structural changes driven by the introduction of new mobility models and ever-changing consumer expectations about lending processes.

To explore the technological impact of these changes on lenders' needs and capabilities, Earnix has partnered with Celent – a leading research and advisory firm specializing in financial services – to produce this report.

This report evaluates the ways technology and competition are driving changes in how vehicle finance companies need to sell, price, underwrite, and retain, and cross-sell their customers. The true implication of these trends is that lenders need technology that improves product pricing, accelerates the speed of processing and decisioning, and reduces overall costs to create a more modern, digital-first vehicle finance business.

From a technology perspective, lenders need composable, rules-based, SaaS technology for loan origination, decisioning, pricing, and portfolio management. Loan decisioning, scoring, and pricing technology, augmented with alternative data and AI-driven analytics, help lenders offer the right loan to the right customer at the right price. This enables them to grow lending volume and maintain or increase loan interest margins in an increasingly competitive loan market. These new data sources are driving competitive advantage in customer segmentation, loan pricing, and product profitability.

At Earnix, we have long understood the auto finance industry's need for an agile and sophisticated pricing technology. We continue to invest in a best-in-class pricing and decisioning platform with ML-driven analytics and optimization capabilities, flexible enough to offer API-integrated connectivity with new data sources and a variety of loan origination systems.

Our customers have confirmed repeatedly how partnering with a world leader in pricing and decisioning solutions proved beneficial for their bottom line and enabled their operations to weather the difficult times associated with rapid changes in their business.

Through our partnership with Celent, we will continue to improve our understanding of your goals and challenges in order to provide an ever-improving technology solution to meet your unique needs.

Giovanni Oppenheim
Director of Banking and Auto Finance Solutions

Earnix

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EXECUTIVE SUMMARY

Vehicle finance (cars, motorcycles, boats, and recreational vehicles) has not escaped disruption from the trends of digitization, digital competition, and customer expectations. Both the vehicle product and financing supply chains are being digitized, componentized, and uncoupled from prior business relationships, technology systems, and loan product/pricing models. Digitization has thrown existing vehicle finance business models into question and lenders need to respond.

Consumer supply and demand are stagnant in many markets and product segments due to restricted vehicle computer chip supplies, rising interesting rates, and higher new and used vehicle prices. In this business and technology environment, all types of vehicle lenders (banks, credit unions, and captive finance companies in retail and indirect channels) have to manage a trifecta of internal business/profile growth goals, competition, and technology limitations.

Challenge: Reduced vehicle supply leading to higher prices but lower long-term customer demand in some segments. Harder to compete for and win profitable customers in all segments.

Opportunity: Enhance and automate your loan pricing and decisioning capability with an enterprise pricing system, alternative data, and AI/ML-driven analytics.

This report evaluates how technology and competition are driving changes in how vehicle finance companies need to sell, price, underwrite, retain, and cross-sell auto loan customers. ***The true implication of these trends is that lenders need technology that improves product pricing, speed of processing and decisioning, and lowers processing costs to create a more modern, digital first vehicle finance business.*** This requires a long-term digital transformation strategy to sustain competitive differentiation.

From a technology perspective, lenders need composable, rules-based, SaaS technology for loan origination, decisioning, pricing, and portfolio management (client retention and cross sell). Loan decisioning, scoring, and pricing technology augmented with alternative data and AI -driven, augmented analytics help lenders to offer the right loan to the right customer at the right price to grow lending volume, and to maintain or increase loan interest margins in an increasingly competitive loan market. These new and digitally ingested data sources are driving competitive advantage in customer segmentation, loan pricing, and product profitability.

Modern rules engines and pricing engines can better manage multiple data sources and analytic models in a loan decisioning and pricing process to create a more refined loan price. ***The bottom line is that financial institutions have more data and analytics to more finely evaluate customers and prospects than ever before.***

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Specific outcomes and benefits financial institutions can achieve are:

- More refined predictive lift (causality between the loan, borrower, and collateral characteristics and loan default frequency and severity) from AI-identified decisions and pricing.
- Ability to fine tune product and pricing strategy not only by credit risk but also to better manage transaction volume, revenue, margin, and profit goals.
- New relationship-based customer retention and cross-sell strategies.
- Faster real-time responses to market changes and competitor products and pricing.
- Improved internal management and auditing of pricing policy, decisions, and outcomes.
- Improved regulatory compliance from better decisioning information and from AI models that provide decisioning explainability.

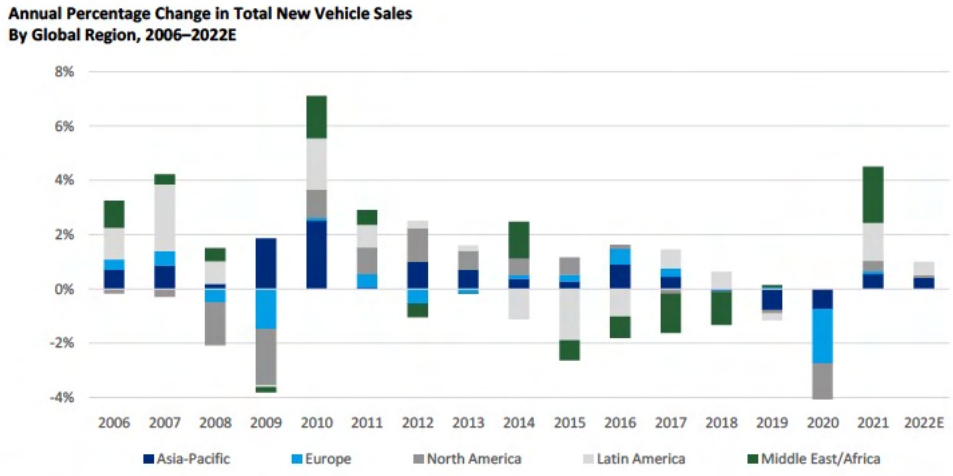
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DRIVERS OF AUTO FINANCE TRANSFORMATION

The market drivers for vehicle demand have been more volatile since the early 2020 pandemic began than any time in industry history. Demand plummeted as uncertainty increased about employment, the ability to travel, and vehicle computer chip supply. Then demand and sales rebounded as central banks lowered interest rates. However, rising fuel costs and vehicle prices caused many consumers to delay vehicle purchases. The inflation situation worsened in 2022 and central banks reversed course and raised interest rates. Heading into 2023 these new uncertainties remain.

Figure 1 depicts the annual percentage change in global automobile sales for global regional markets. Global sales growth is on track to decline strongly (from 4.40% in 2022 to 0.9% in 2023) driven by mature markets in Europe and North America. China and other emerging markets continue to have small increases in sales.

Figure 1: Total New Vehicle Sales Are Declining in Most Regions



Source: Celent analysis, International Association of Motor Vehicle Manufacturers

Vehicle Supply and Sales. Vehicle sales are determined by both supply and demand. In many countries retail vehicle sales have been flat to declining in part due to smaller supply of specialized vehicle computer chips and higher vehicle prices. Lower vehicle supply and manufacturers' choice to produce more higher cost vehicles—often with add-on packages—has caused vehicle prices to rise significantly. While

many consumers purchased these vehicles, rising energy prices are again driving consumers to demand lower cost and/or more energy efficient vehicles. Finally, higher loan interest rates increased auto financing costs, reducing affordability and lowering demand.

According to LMC Automotive's forecast for 2023, new vehicle sales at 85 million represent a stronger increase than in 2022, but total new sales will remain below pre-pandemic sales levels of about 90 million deliveries in 2019. Supporting this outlook along with higher interest rates and vehicle prices is the decision by many clients to keep their vehicles longer; indeed, the average age of cars and trucks on the road increased to 12.2 years in 2022 from 12.0 years in 2021, according to S&P Global Mobility.

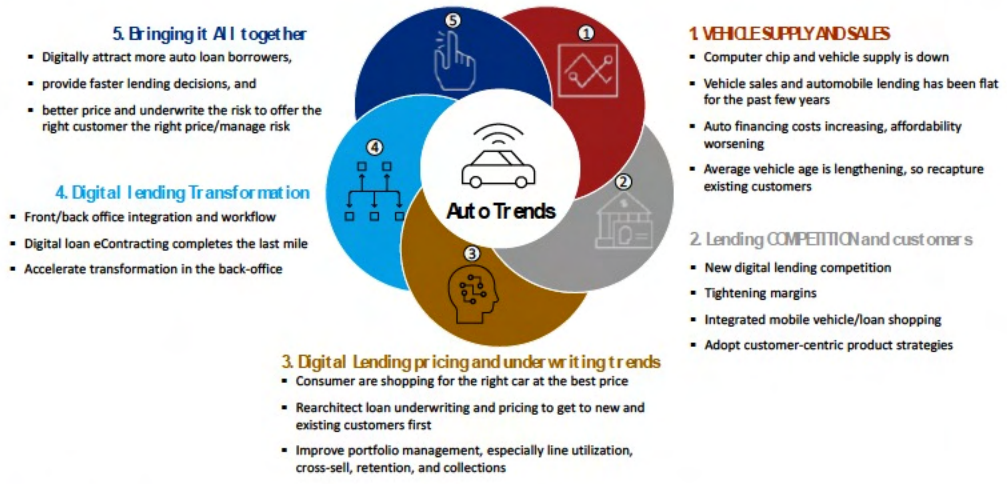
In this difficult and uncertain business environment, lenders will need to reexamine their digital transformation strategy and technology levers to maintain acceptable revenue, margin, and profit goals.

Auto Lending Business and Technology Strategies

Vehicle finance firms should focus their strategy on these key areas: how to manage lending policy, products, and pricing in the expected/continued uncertain and volatile sales markets; how to attract new clients with fast, efficient, and customer-specific loan offers; and how to retain and cross-sell the next loan, insurance, or other product to existing clients.

Figure 2 summarizes Celent's view of the key business and technology trends and strategies impacting global auto finance during 2023 and beyond.

Figure 2: Business and Technology Strategies For a Disrupted Auto Finance Market



Source: Celent analysis

Adapt to Shifting Supply and Demand. Vehicle sales are determined by both supply and demand. In many countries retail vehicle sales have been flat to declining in part

due to smaller supply of specialized vehicle computer chips and higher vehicle prices. Lenders need to make their business models more digital to lower costs and better attract available customers until new vehicle and loan markets resume growing. Existing auto loan customers are also important prospects in tight markets.

Respond To Competition and Customers. New digital lending competition in Australia, Europe, North America, and elsewhere (i.e., www.autoscout24.de, Autotrader.com, Carsdirect.com, Carmax.com, Carsales.com.au, Carshop.co.uk, Cartopia.com.au, Carvana.com, and Clutch.com) has increased vehicle price and loan financing transparency for consumers. Stiffer competition has also tightened loan margins and increased integrated mobile vehicle/loan shopping beyond the car dealer lot.

Traditional lenders need to be as digital as the competition, decide whether and how to participate in digital vehicle/auto finance platforms, and be able to communicate with, underwrite, and price customers through digital channels.

Finally, lenders need to consider their loan products and pricing in relation to the threat of tax-deductible home equity loans and lines of credit (HELOCs) which some consumers use to finance vehicles. Home equity lending is the great new hope for lenders as mortgage refinances decline. For depository-based institutions relation-based pricing is one competitive response. For some of these institutions, offering a HELOC may be a better choice.

Refine Loan Pricing and Underwriting. Vehicle finance loans have many high level and detailed pricing factors such as:

- source (bank, captive auto finance, or credit union)
- loan type (term, amount, etc.)
- vehicle type
- loan applicant credit score and credit risk
- geographic market: state, region, other
- customer relationship



While higher vehicle pricing has helped vehicle manufacturers and dealer revenues and margins, many customer segments still seek price transparency for vehicles and vehicle financing, especially through digital channels. Moreover, community-based financial institutions (credit unions and community banks) increasingly value the auto loan as an anchor product in the customer relationship, and compete aggressively for loans based on relationship and price.

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While many lenders have abandoned Excel spreadsheets for systems-based product pricing engines (PPEs), some legacy PPEs may be difficult, slow, and costly to maintain and update. More modern, componentized, cloud-deployed, and API-

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integrated solutions can provide the scalability, ease of update, and customization to compete in disrupted auto finance markets.

Moreover, customers have become more price sensitive and expect some relationship-based value from their primary banking institution and specialist lenders. In this environment, and when competing with digital marketplace lenders and captive finance companies, depository lenders need greater flexibility to price loans by customer relationship in real time across any channel (indirect and direct).

Rearchitecting loan underwriting and pricing is essential for both retail consumer-direct channels and indirect (wholesale) channels. Modern, rules-based, SaaS-based systems operate at scale to quickly deploy, update, and respond to loan opportunities in real time in response to intraday market changes.

To further refine loan pricing and underwriting, lenders are incorporating nontraditional ("alternative") data (i.e., rental, cell phone, and utility payment data) and analytics (AI/ML) into lending processes. The modern systems described above have stronger capabilities to incorporate these additional resources into systems and processes.

Transform Digital Lending Operations. While customer-facing mobile applications often have the loudest sizzle and IT budget, Celent believes that the back-office systems (LOS, loan decisioning and pricing, digital document archives, consumer data files, and loan servicing systems) drive the front office systems and enable the firm to optimize real-time customer engagement, product offers, and new account acquisition. This is especially true of indirect channel lending that accounts for the greatest share of lending transactions for many institutions.

To achieve this real-time, front/back-office automation, open API-enabled integration of systems is required. This supports event-driven workflow that speeds lending processes. Lending also require numerous documents, with loan applications, compliance disclosures, collateral documents, and promissory notes being the most common.

Celent believes that digital loan eContracting/eSignature technology for many of these documents help lenders advance from faster service to fastest service, and create competitive differentiation. Contract signing and digital loan eContracting completes "the last mile" in the loan origination journey, facilitates faster funding and monetization of the loan asset, and improves the efficiency of onboarding loans to loan servicing systems and core banking systems. Celent believes that loan eContracting software will become table stakes for any mid- to large-sized auto lender within 3 years.

Finally, Celent believes that digital transformation of the loan decisioning and pricing function (enabled by the other factors discussed above) is where lenders can create the greatest financial value and optimize their technology return on investment.

Connect Sales and Servicing. Connecting sales and servicing is an iterative loop of selling, onboarding, servicing, renewing, and cross-selling customers. Systems that

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can ingest customer, loan product, and loan pricing information in many or all of these processes have immense value to:

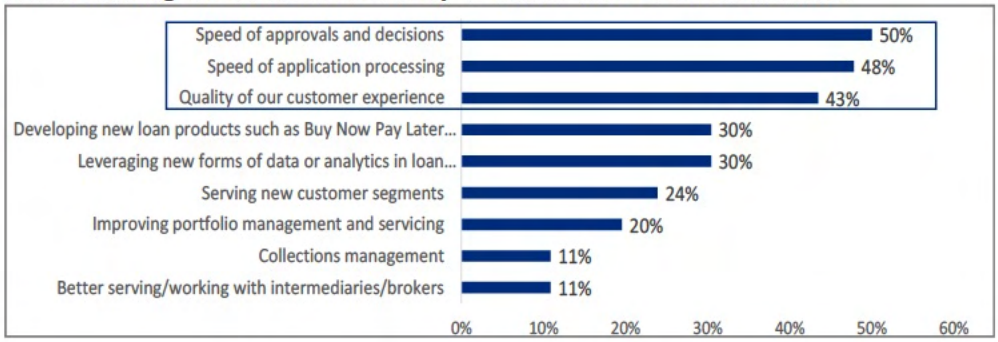
- Digitally attract more auto loan borrowers and provide faster lending decisions
- Better price and underwrite the risk to offer the right customer the right price while optimizing risk management
- Improve portfolio management, especially line utilization, cross-sell, retention, and collections

Where Retail Lenders Plan to Invest

It is important for lenders to have an idea of lending industry technology investment spending levels and priorities that lenders can compare with their own. This helps lenders decide where to invest.

Figure 3 presents summary results from Celent's US survey of retail banks on banking industry trends and priorities in September 2022. The survey asked about retail consumer loans: automobile, BNPL, credit card, and personal loans. The results support the view that lending and decisioning technology is a very high priority at financial institutions heading into 2023 and beyond.

Figure 3: Lenders That Rearchitect Loan Underwriting and Processing and Improve Portfolio Management are More Likely to Win in These Turbulent Times



Source: Celent's survey on banking industry trends and priorities, September 2022. N=46, multiple responses allowed.

The top two priorities identified in the survey are speed of loan approval and quality of customer experience. The core technologies that enable these top three IT investment priorities are the loan scoring/decisioning engine, product/pricing engine (PPE), the loan origination system (LOS), and digital signatures on digital documents (eContracting).

LOS investment may either be system replacement or enhancement. Replacement has higher costs, longer implementation time, and greater risks. As a result, many lenders pursue a near term strategy of opening up the system to additional functionality. If the LOS has been replaced within the past 5-10 years then it's less

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likely to be replaced unless the firm is pursuing an enterprise lending system strategy.

Loan decisioning engines and PPEs (the primary focus of this report) have the largest impact on rate/volume/margin/profit. These systems are the engines that most drive net interest margins and loan profits. eContracting impacts operational expense and customer experience positively but is not the main focus of this report.

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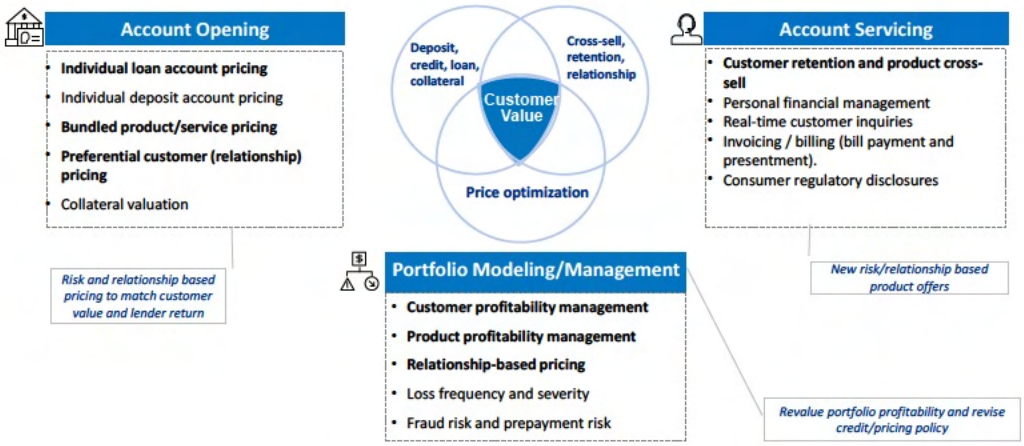
INNOVATION IN LOAN PRICING AND DECISIONING

While some lenders may be more focused on loan origination pricing with specialized line-of-business product/pricing engines (PPEs), some are adding enterprise business rules management systems (BRMS) to not only improve their core pricing functions but also to expand capabilities into adjacent areas.

A business rules management system (BRMS) captures decision logic as a business rule, which can then be integrated with one or more software applications. Instead of embedding rules within an LOS or other system, the rules are externalized from a single application so they can be shared with multiple applications more easily. A product pricing engine is a specialized class of BRMS used to calculate pricing options for loans.

Figure 4 maps the taxonomy of loan decisioning use cases/applications across the lending lifecycle. Applications/use cases more directly applied to loan pricing and other areas of vehicle finance are highlighted in bold.

Figure 4: Rules Engines Have Multiple Applications Across the Credit Cycle



Source: Celent analysis

Expanding system usage expands benefits across use cases on one consistent platform. Many lenders start by implementing the solution on one area initially and with plans to expand to new areas over time. This creates flexibility and scalability to manage large volumes of loan products, rates, and fees that change regularly. It also

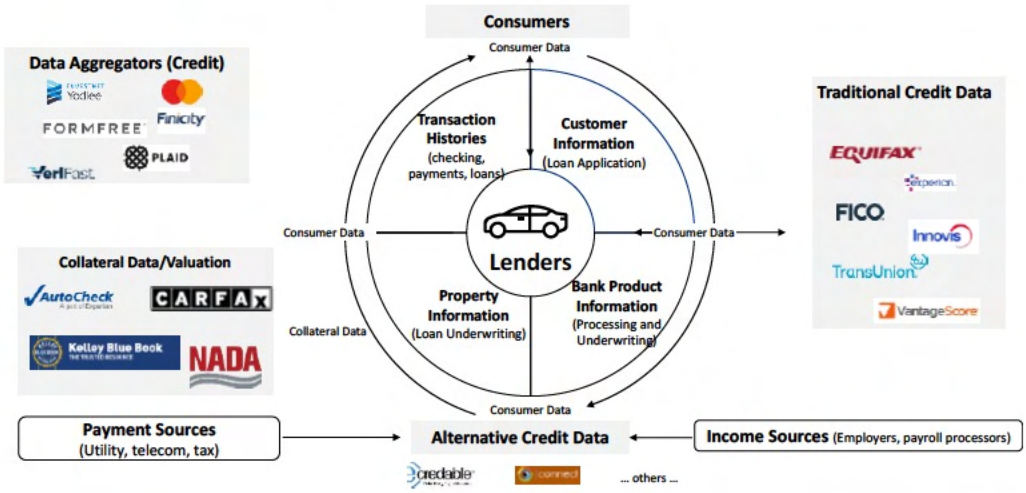
helps lenders make rate changes more quickly with less manual labor, reduces mistakes, and improves auditability.

New Data Sources to Drive Pricing Analytics Innovation

Decisioning advances are based on multiple factors: the software decisioning system itself, new data and data management, and new analytic capabilities such as AI/ML. This means that lenders also need systems that can utilize new data sources to refine analytics and loan decisioning and pricing.

Figure 5 shows a variety of traditional and newer data sources. First, the process begins with the internal customer and product data a lender has. Second, retail FIs share consumer loan product and payment data with credit bureaus that aggregate the data to create credit repositories and information products.

Figure 5: Traditional and Alternative Data and Analytics Drive Pricing Innovation



Source: Celent analysis

Figure 5 also shows that consumer data collection and usage in retail banking has expanded dramatically beyond what financial institutions traditionally collected and utilized. Lenders are now using alternative data sources to create more robust and new consumer scoring models, and also to expand the universe of consumers that they can score with non-traditional credit report data and scores. Data aggregators have also emerged in the past decade with a consumer-direct permissioned data model. Regulatory compliance requirements demand attention here but continue to support advancement here while protecting consumers.

These new and digitally ingested data sources are driving competitive advantage in customer segmentation, loan pricing, and product profitability. Modern rules engines and pricing engines can better manage multiple data sources and analytic models in a loan decisioning and pricing process to create a more refined loan price. The bottom line is that financial institutions have more data and analytics to more finely evaluate customers and prospects than ever before.

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PATH FORWARD

Vehicle finance is a core lending business for many types of financial institutions. Volume and profitability are generally stable to increasing in normal markets. However, the current market is not normal, so business strategy and technology need to be dynamic to thrive through the current cycle.

Componentized, rules-based technology for loan origination, decisioning, pricing, and portfolio management augmented with alternative data and AI-augmented analytics are essential components of a best-in-class vehicle finance business, and will drive competitive advantage in customer segmentation, loan pricing, and product profitability.

Modern rules engines and pricing engines can better manage multiple data sources and multiple analytic models (rules-based, econometric, and AI/ML) in a loan decisioning and pricing process to create a more refined loan price. The bottom line is that financial institutions have more data and analytics to more finely evaluate customers and prospects than ever before.

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If you found this report valuable, you might consider engaging with Celent for custom analysis and research. Our collective experience and the knowledge we gained while working on this report can help you streamline the creation, refinement, or execution of your strategies.

Support for Financial Institutions

Typical projects we support include:

Vendor short listing and selection. We perform discovery specific to you and your business to better understand your unique needs. We then create and administer a custom RFI to selected vendors to assist you in making rapid and accurate vendor choices.

Business practice evaluations. We spend time evaluating your business processes and requirements. Based on our knowledge of the market, we identify potential process or technology constraints and provide clear insights that will help you implement industry best practices.

IT and business strategy creation. We collect perspectives from your executive team, your front line business and IT staff, and your customers. We then analyze your current position, institutional capabilities, and technology against your goals. If necessary, we help you reformulate your technology and business plans to address short-term and long-term needs.

Support for Vendors

We provide services that help you refine your product and service offerings. Examples include:

Product and service strategy evaluation. We help you assess your market position in terms of functionality, technology, and services. Our strategy workshops will help you target the right customers and map your offerings to their needs.

Market messaging and collateral review. Based on our extensive experience with your potential clients, we assess your marketing and sales materials—including your website and any collateral.

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