CREDIT DECISIONING AGILITY AND GOVERNANCE

A COVID-19 crisis management imperative

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INTRODUCTION

COVID-19 has severely impacted the consumer lending industry, with much uncertainty around what is yet to come. The global economy and unemployment rate have changed so fast and in such unprecedented ways that the past is no longer a reliable predictor of the future.

As customers face extreme financial difficulties — asking for payment holidays and forbearances — banks are making decisions and planning actions that will have a potentially severe and lasting impact on their institution's financial health and share price. Underwriting and credit standards will likely be tightened across the customer base, leading to long-term regulatory, growth and profitability challenges.

THE TIME IS NOW TO BUILD BACK BETTER

Today's challenges also present new opportunities. Our paper helps banks act now and develop a foundation for competitive excellence — today and post-crisis.

Given the unique nature of this crisis and the the potential for multiple waves, a constant adjustment of segments, strategies and actions may be required — especially as new information and performance data loops back. Current business as usual bank governance, legacy technology and processes are often not geared to move this quickly.

It is a critical time for banks to design and implement sustainable, adaptive risk management approaches, which will not only enable well-planned actions to control risk, and maximize profitability, but also to serve customers and the broader public.

There are three capabilities that banks need:

- Accelerated decisioning lifecycles
- Robust governance and decision traceability
- Dynamic model performance and portfolio monitoring

Banks who invest now will create a competitive advantage to not only aid in navigating the crisis, but to succeed and grow as we emerge from the pandemic.

THE DIGITIZALITION IMPERATIVE

For the last decade, digitalization has been an important driver of transformational change. In the midst of the pandemic, it is an immediate imperative.

In our paper, Oliver Wyman and Corridor Platforms have collaborated to explore how a well-designed decisioning platform can provide a bank with adaptability and speed, robust governance and controls, and enhanced monitoring capabilities. Such a platform enables seamless integration of new data, analytics, and strategy across the customer life cycle.

Additionally, we evaluate how a platform utilizing open APIs allows firms to realize returns on investment in technology, analytics, and talent by leveraging existing systems as quickly as possible. Finally, we pose examples of the "must haves" required to start this journey, providing the means to allow institutions to transform their decisioning capabilities in a matter of months rather than years.

THE ROAD AHEAD: WHAT'S NEEDED TO TRANSFORM RISK AND DECISIONING

ACCELERATED DECISIONING LIFE CYCLES

The extreme extent of impact to customers from the pandemic has created irrevocable change, and the past is no longer a good predictor of the future. The future credit environment is uncertain, and traditional models based on historical delinquencies, unemployment rate, or gross domestic product (GDP) will not be enough.

However, a crisis is a good time to learn, compress timelines and drive innovation. The good news is that the capabilities needed to successfully maneuver through the pandemic are highly overlapping with those driving digital transformation. Investing in and building capabilities now will set banks up for long-term success.

In today's environment, a well-designed integrated decisioning platform offers banks the connective tissue to effectively navigate the crisis and beyond. Deploying innovation at start-up speed is achievable due to newer plug and play automation capabilities that can enhance legacy technology within an 8-12 week period.

The advantage

By accelerating decisioning life cycles, banks can incorporate new sources of data and variables; create new, actionable customer segments; frequently recalibrate predictive models and scores; and rapidly test and implement new credit strategies.

This helps banks to achieve organizational agility without increased risk, but requires banks to create the proper connective tissue between all key stakeholders and processes. Doing so properly is critical as it provides the foundation to leverage real-time information flow for rapid decision making and seamless promotion to production.

ROBUST GOVERNANCE AND DECISION TRACEABILITY

New internal and external data such as the as the epidemiological intensity of COVID-19 (which could be regional), unemployment metrics (which can be industry-based), and customer requests (whether a customer asks for forbearance or not) are now relevant in decisioning strategies. But incorporating this data needs special care. Banks need to ensure that permissible purpose and fair lending regulations are top of mind as well as retaining brand and customer loyalty.

Compliance considerations should be identified and addressed upfront, with experts defining appropriate ways to use new data and being included in the design of various customer segments and action strategies. Banks should create upfront transparency on compliance metrics, so the first-line has clear rules right from the start.

Creating the new business rules and segments requires that the team evaluate the impact of various scenarios quickly, including volumes, losses, profitability, and operational readiness. As new data and models are deployed, retaining readily accessible, accurate and centralized records of data, model versioning and credit decisions made in production will be critical. There must be a process for the post approval changes to be implemented into production quickly. The last recession left a long tail of legal implications for banks, and the ability to demonstrate adherence to compliance guidelines post-hoc for legal and regulatory purposes will be imperative.

DYNAMIC MODEL PERFORMANCE AND PORTFOLIO MONITORING

The COVID-19 pandemic has unfolded with weekly (and at times daily) shifts in epidemiological outcomes, lockdown patterns, government response, and business closures. These shifts in turn have driven unprecedented changes in customer behavior that must be addressed by financial institutions. To keep up with this crisis, banks must create new segments, models, and business rules to quickly evaluate the impact of various scenarios and understand expected volumes, losses, and profitability.

Centralized, real-time monitoring enables decision makers and experts to better identify and manage risks associated with models and business strategies, allowing for the continuous improvement of the segmentation and analytics underlying critical decisions.

THE CHALLENGES OF KEEPING PACE WITH RAPID CHANGE

Over the past several years, financial institutions have made significant but uneven progress in adopting big data, machine learning (ML) and other new analytics technologies across a wide range of use cases. In many cases, these investments have shown tangible benefits for organizations, including:

- Improved accuracy and performance, driving better, real-time decisions with the potential for real economic impact.
- Faster time-to-market for model development and enhancement, allowing for immediate incorporation of new data that reflect recent trends in customer behavior and the economy.

However, achieving these benefits in credit decisioning has not been easy; it requires moving past experimentation and overcoming the challenges inherent in adopting new data and machine learning into core business processes that are heavily regulated. Successful implementation requires rapid innovation without compromising governance.

While speed in the enhancement of data and models is critical, this is only part of what is needed to achieve agility in this crisis. Reacting quickly and effectively to an evolving market and competition requires the ability to track performance in real time and to update strategies and policies immediately based on observed results.

Adapting at the speed of the market requires answering three key questions — the first two questions are of critical importance today, while the third looks forward to the challenges of a customer base that transitioned to the digital marketplace (almost overnight) due to stay at home orders around the globe.

Failing to adequately address these questions may well become an existential challenge for many banks.

How can we quickly update and advance our production models in a well governed and transparent manner — to keep pace with COVID-19 impacts and the evolution of the market?

Challenges	Cost of not succeeding
Experimenting with new data and analytic techniques may be straightforward and enhance the speed of iteration and development, however, transferring such models to the production environment can be slow and costly — often requiring expensive and time-sensitive compliance, replication and testing exercises.	Traditional development, governance, and implementation processes can lead to significant inefficiencies and extensive model update cycles, removing much of the benefit of using expanded data sources and machine learning models.

How can we integrate our decisioning models and policies to allow for rapid and efficient updating in the face of evolving conditions?

Challenges	Cost of not succeeding
Changing policies and decisions, in most organizations, is a slow, manual process — resulting in a lag of weeks to months. Policies are evaluated, sent for approvals, programmed, and tested before moving into production.	Every hour can be critical as institutions react to the changes in competitive or economic conditions; the inability to quickly change policies in the face of new information may lead to the loss of customers or adverse selection where gaps cannot be closed.

Should I invest in rapidly building up capabilities to execute complex machine learning models and provide real-time decisions and optimized account-level pricing?

| Challenges	Cost of not succeeding
Translating advancement in predictive analytics to real-time decisioning at an individual or product level (at scale) has been a technology challenge.	Customers expect hyper-personalization and customized solutions as well as pricing, particularly as they increasingly spend time engaging with banks through digital channels. The ability of companies to attract customers during and after the crisis is likely to depend on their level of real-time modeling sophistication to address each segment.

WHY AN INTEGRATED DECISIONING PLATFORM?

The underlying challenges described above are largely not about revising individual models tailored to market conditions in isolation, but rather about how to transform the surrounding processes and technologies required to fully leverage those models. Every step of the analytics life cycle relies on the collaboration of several functions, including information technology, data management, decision sciences, and business owners. Additionally, each step is subject to inspection and approval by a range of stakeholders, including model risk management, compliance, and regulators.

Exhibit 1. Steps in the analytics lifecycle

Existing process

| Data |
| Features |
| Models |
| Strategies |
| Production |
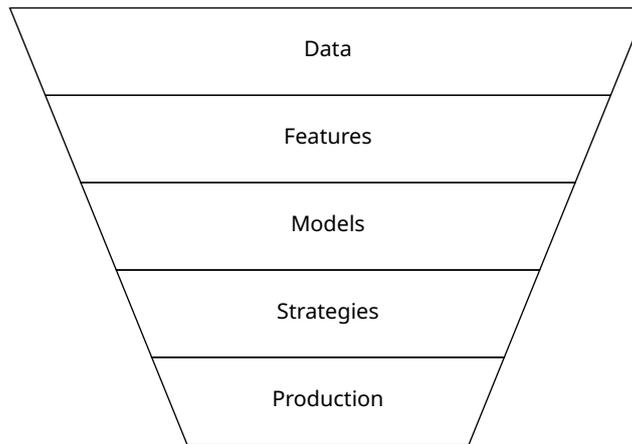
Issues faced

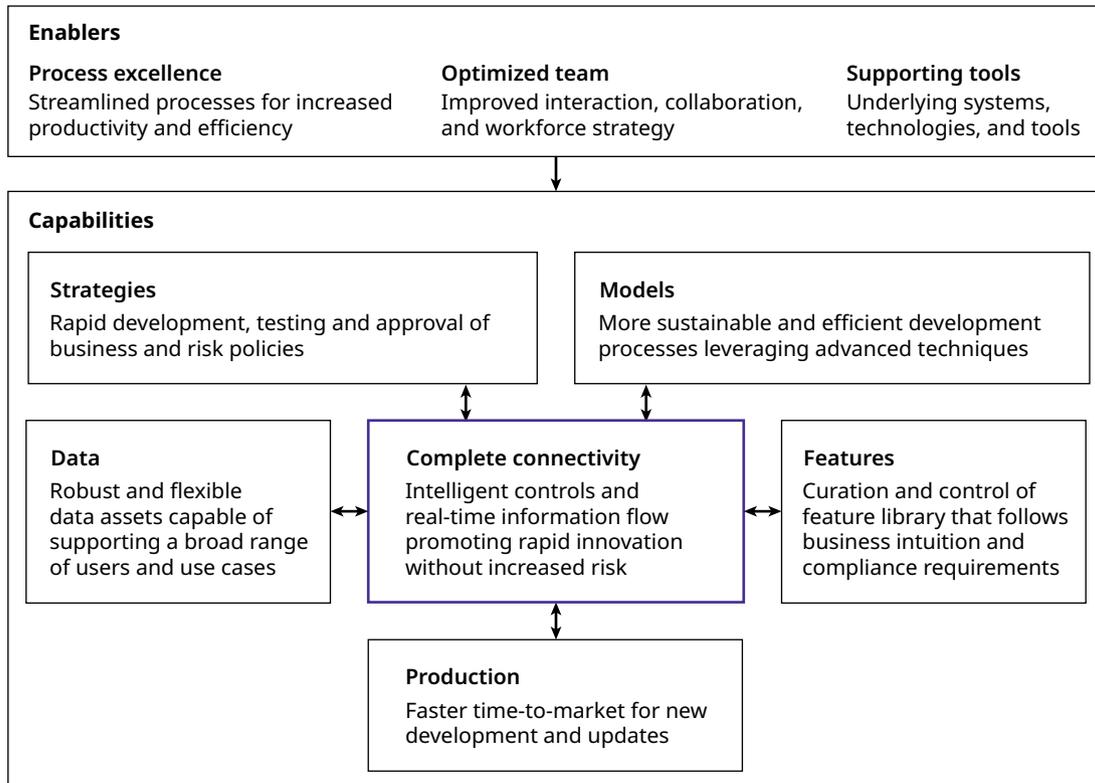|	
Business owners	• Changes in strategy are painfully slow and manual
Decision science	• Non-standard or inadequate processes • Inefficient and manual ways of working
Data/technology	• Manual handoffs and implementation are slow and expensive
Regulators	• Lack of guidance on use of AI/ML for core processes
Model governance	• Long and expensive process • Testing protocols poorly defined for AI/ML
Compliance	• No visibility into model development • Unclear requirements for AI/ML models

Source: Oliver Wyman analysis

Achieving organizational agility in this environment requires carefully designing each step of the analytics life cycle to encourage experimentation and innovation within a well-controlled and efficient environment. In particular, the proper identification, design, and implementation of consistent processes, procedures, and tools can critically drive:

- **Efficiency:** Eliminate costly and time-consuming replication of work, miscommunication, or rework due to inconsistent application of standards.

- **Modularity and consistency:** Facilitate the reuse and recombination of existing elements in new models/strategies.

- **Governance:** Implement well-designed control points to allow for explicit oversight and the staged sign off for elements with specified purposes.

- **Traceability:** Data, features, and models can be traced from inception to deployment, with clear versioning and visibility into upstream linkages and downstream dependencies.

Looking across the analytics life cycle, many banks are at different places in the journey to achieve the connectivity and efficiency that allows this kind of growth. Prior to the pandemic, banks had started to invest in a wide range of vendor and in-house point solutions to solve pieces of the puzzle, but these cannot be effective without robust end-to-end connectivity and governance.

Exhibit 2. Achieving organizational agility through connectivity

Enablers

Process excellence	**Optimized team**	**Supporting tools**
Streamlined processes for increased productivity and efficiency	Improved interaction, collaboration, and workforce strategy	Underlying systems, technologies, and tools

Capabilities

Strategies
Rapid development, testing and approval of business and risk policies

Models
More sustainable and efficient development processes leveraging advanced techniques

Data
Robust and flexible data assets capable of supporting a broad range of users and use cases

Complete connectivity
Intelligent controls and real-time information flow promoting rapid innovation without increased risk

Features
Curation and control of feature library that follows business intuition and compliance requirements

Production
Faster time-to-market for new development and updates

Source: Oliver Wyman analysis

INTEGRATING KEY CAPABILITIES

Below, we discuss a few of the key capabilities that can be integrated with the **Models**, **Strategies**, and **Production** steps (shown in the prior exhibit) to drastically shorten the analytics life cycle without increased risk. In the following section, we will discuss how these changes can be easily made within the context of a "de novo" (a new) build or by leveraging existing investments in point solutions and infrastructure.

RAPID ITERATION OF MODELS WITH GOVERNANCE

Banks need a balanced system with built-in constraints to ensure rapid adaptation to change without compromising compliance or governance.

Enabling organizations to be nimble in enhancing and adapting models requires significantly shortening the traditional cycle of model development, validation, and promotion to production. Implementing a decisioning platform with well-placed connective tissue that links the firm's data, development, and production environments, along with a centralized model and data governance, can significantly shorten this cycle to days or weeks rather than months or years. Rather than each new iteration of a model being a costly validation exercise, validation teams can become comfortable with and influence built-in controls and safeguards by using ongoing monitoring — to initiate more frequent, targeted validations of known vulnerabilities.

Key features	Benefits
Centralized data governance with direct connections to all production data sources	• No manual hand-offs or flat files for model development, and no discrepancies between development and production data. • Pre-defined permissible purpose tracking for each variable, avoiding costly rework.
Standardized testing suite for model performance, compliance, test and learn, and swap sets	• Standardized suite of tests integrated with performance data allows for continuous testing and evaluation. Transparent compliance requirements establish the rules of the game upfront and avoid delays in execution. • Models can be easily compared and promoted to production.
Automated performance monitoring to test and learn with confidence	• Scheduled simulations against defined accuracy thresholds allowing for faster observation and re-calibration of poor or declining model performance.
Direct transfer of model/policy files from development to production environment	• No testing or re-coding required to confirm correct implementation of final model. • With data governance, no ambiguity around consistency of data, transformation, and data cleaning protocols.

ILLUSTRATIVE STUDY 1

EFFICIENCY GAINS THROUGH AN INTEGRATED DECISIONING PLATFORM

A traditional, siloed approach to model development and implementation presents many inefficiencies — resulting in many cycles of iteration – which a new-world approach enabled by an integrated decisioning platform simultaneously addresses.

TRADITIONAL SILOED APPROACH
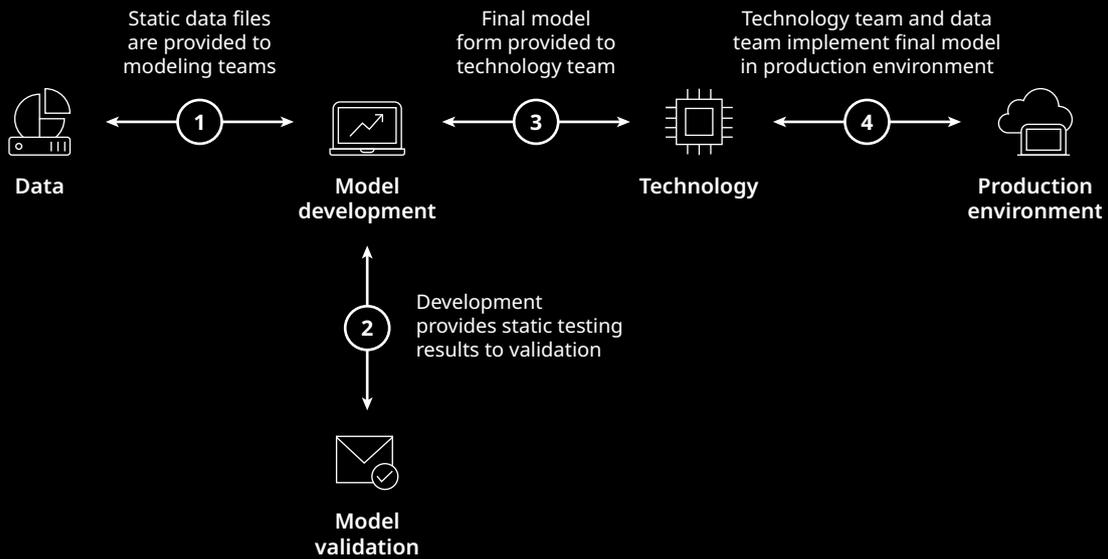
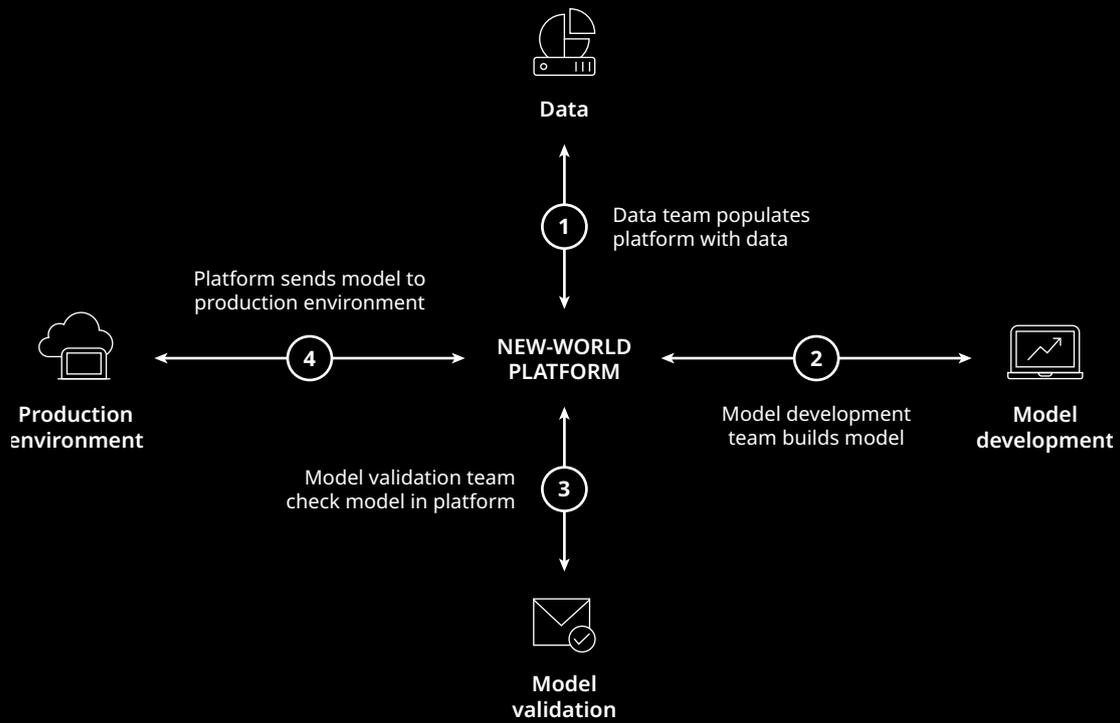| Data provisioning	Model validation	Promotion to production
Data provisioning in a traditional, siloed approach is performed through static file transfers which necessitate manual updates, handoffs, and reconciliation to production data for each model update. Data is often raw tables without standard nomenclature, leading to introduction of unintuitive or non-permissible variables, which then require costly redevelopment efforts after errors are discovered.	Model validation in a traditional approach is based on static tests which generally do not allow for changes of the algorithm without an entirely new validation cycle. Further, a lack of standardized testing often leads to extended iteration between validation and testing teams.	Promotion to production in the traditional approach involves translations which slow down the process and introduce potential errors. Use of different programming languages between production and development often lead to expensive and time-consuming replication and testing efforts. Data teams must re-send data into the production environment, with mismatches leading to an expensive and iterative debugging process.

NEW-WORLD APPROACH WITH FULL INTEGRATION

Data

① Data team populates platform with data

Platform sends model to production environment

Production environment ④ ⟷ **NEW-WORLD PLATFORM** ⟷ ② **Model development**

Model development team builds model

Model validation team check model in platform ③

Model validation

Data provisioning	Model validation	Promotion to production
The new-world platform-enabled approach means there are no offline breaks in processing flow, and production data can be used for development, avoiding any reconciliation efforts. Pre-defined permissible purpose tracking for each variable only allows for creation of compliant models.	With a new-world platform approach, a standardized suite of tests integrated with performance data allows for ongoing testing and evaluation. Model versions can be easily be compared and changes rapidly assessed and approved by the validation team.	By contrast, a new-world platform can enable direct promotion to production without additional testing cycles, as automated controls assure correct implementation.

STRATEGY AUTOMATION

Offers the ability to quickly react to high degrees of uncertainty and the pace of change in the environment.

Agility in business and risk strategy requires integration and insight across all stages of the underwriting and customer management life cycle; frequent and comprehensive monitoring to highlight potential issues; and the flexibility to quickly change policies and strategies as new information arrives.

Key features	Benefits
Central systematic repository and automated test and learn — with real-time impact analysis	• Business friendly rule engine enables build, review and experimentation by business teams without relying on technical data, modeling and technology teams.
Direct to production implementation with monthly tracking and alerts	• Eliminates manual re-coding and testing of rules/policies by technology reducing production cycle times substantially. • Enables constant tracking of business outcomes versus forecasts.

REAL-TIME PERFORMANCE

The technology and capabilities to make better, faster decisions with real economic and customer impact.

In today's digital-focused lending marketplace, customers can get loan pricing in real time across several providers. The industry's ability to produce competitive pricing at an account-level will only increase over time. Building effective data and analytics capabilities to support adaptation to the changing customer behaviors and being able to proactively develop offers that address customer challenges can also help drive growth and strengthen a bank's customer base.

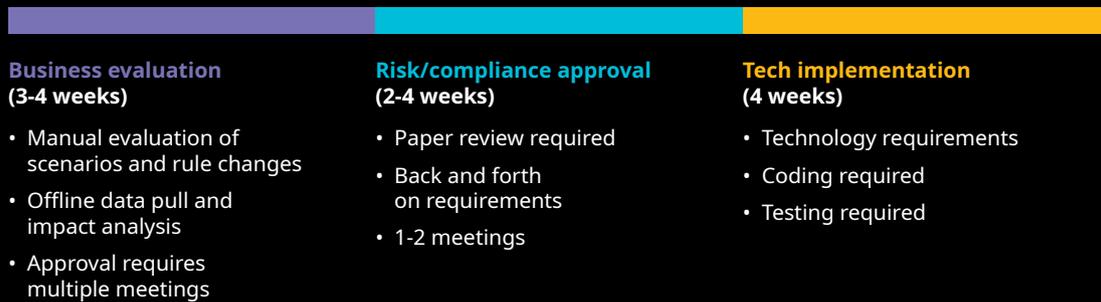| Key features	Benefits
Innovative solutions to allow decisioning to be optimized at an individual level	• Ability to measure return at an individual level and adjust pricing to a customer's risk allows for precise trade-offs between risk and return. • Substantial improvement in acceptance rates can be driven by targeted loan-level pricing specially when price is a deciding factor (i.e. online loans).
Adaptive and proactive customer offers and life cycle management capabilities	• Ability to more effectively upsell, cross-sell, and conduct line management for existing customers helps to strengthen relationships.

ILLUSTRATIVE STUDY 2

FASTER TIME TO MARKET THROUGH AN INTEGRATED DECISIONING PLATFORM

Integrating a well-designed decisioning platform provides the benefits of cutting-edge analytics with the adaptability and speed of leading digital players. The platform can seamlessly integrate analytics and strategy across the customer life cycle.

BEFORE
Legacy process
(9-12 weeks)

Business evaluation (3-4 weeks)	Risk/compliance approval (2-4 weeks)	Tech implementation (4 weeks)
• Manual evaluation of scenarios and rule changes	• Paper review required	• Technology requirements
• Offline data pull and impact analysis	• Back and forth on requirements	• Coding required
• Approval requires multiple meetings	• 1-2 meetings	• Testing required

AFTER
Platform-enabled
(1 week)

Business evaluation (1 week)	Risk/compliance approval (1 meeting)	Tech implementation (Instantaneous)
• Analysis of multiple scenarios	• Standardized online dashboards leveraged	• Production ready code generated by system on policy approval
• Online simulations of reporting	• Realtime changes and impact measured	
• Just-in-time changes and impact analysis for approval		

| | | | | | **Time saved**

GETTING THERE FASTER WITH LESS INTERRUPTION

An integrated decision platform offers many benefits. However, a remaining challenge for firms is how to achieve this goal in a cost-efficient manner, leveraging existing technology and analytical platforms with minimal disruption to ongoing processes.
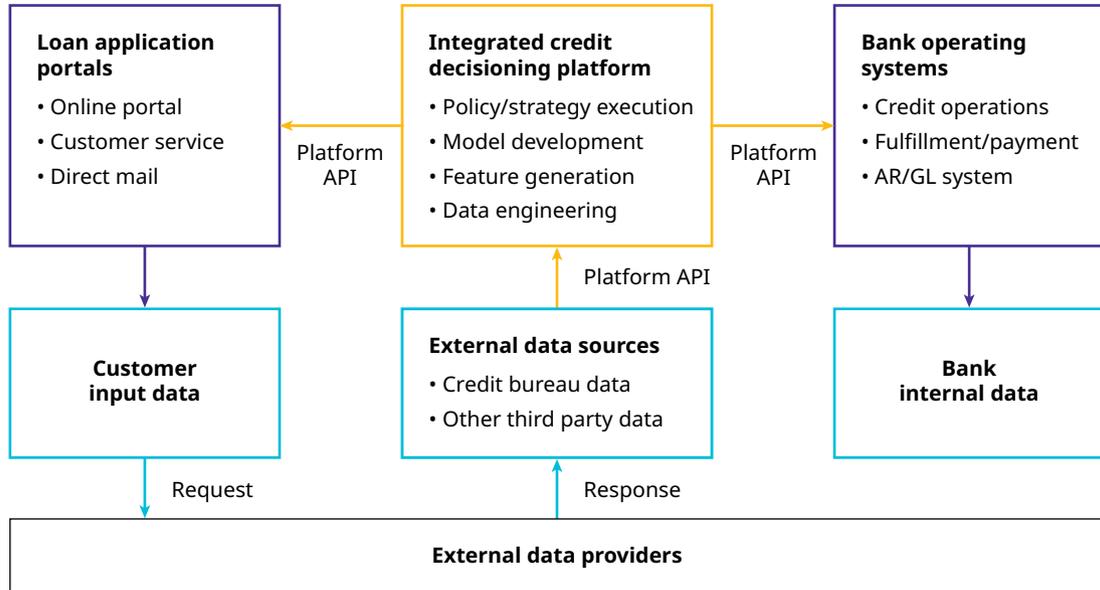
By developing a modular platform utilizing APIs it is possible to implement such a platform using existing data, processes, and systems. Using this modular design principle that works along with a bank's existing technology, firms can achieve the benefits of leading-edge credit decisioning within weeks of development.

The modular design approach makes platforms like these easy to implement and lessens disruptions to current processes — allowing for the first stage to be installed rapidly, then subsequently evolve with an institution's changing systems and business processes.

While some new technologies and modelling techniques need to be adopted to achieve this vision, all of this is possible by building overlays and connective tissues to existing source systems and point solutions. Institutions can work within their own systems; thus, a full technology rebuild is not necessary to achieve this transformation.

Exhibit 3. Integrated platform
An integrated new-world platform connects seamlessly with existing data and technology platforms using APIs.

Loan application portals		Integrated credit decisioning platform		Bank operating systems
• Online portal • Customer service • Direct mail	Platform API	• Policy/strategy execution • Model development • Feature generation • Data engineering	Platform API	• Credit operations • Fulfillment/payment • AR/GL system

Platform API

Customer input data	External data sources	Bank internal data
	• Credit bureau data • Other third party data	

Request   Response

External data providers

— Existing bank processes   — Existing bank data   — Integrated platform

Source: Oliver Wyman analysis

This type of modular solution is intentionally designed to have a low technology footprint to efficiently integrate with legacy systems. While these platforms are big data-first solutions, there frequently are no other requirements for beginning to integrate with legacy decisions and processes, either on-premises or in the cloud. As such, the typical length of time to see real impact in process and decision-making efficiency, governance and effectiveness is often only a few months.

CONCLUSION

The consumer lending market is in a time of unprecedented change. With rising unemployment and COVID-19's impact on the global economy, it is expected that there will be a long tail of financial, operational and reputational implications. There is no historical precedent, and the future credit environment is uncertain.

The good news is that the capabilities needed to successfully maneuver through the pandemic are highly overlapping with those driving digital transformation. If banks invest and develop these capabilities now, they build competitive advantage for the long-term. With today's environment, banks have an opportunity to compress what is usually accomplished in years into a matter of months.

Deploying innovation at start-up speed is achievable due to newer plug and play automation capabilities that can enhance legacy technology within an 8-12 week period.

WHAT'S NEEDED

Institutions must enhance capabilities to ensure faster adaptation and reactivity to market changes, robust governance and controls, and enhanced model and portfolio monitoring.

A well-designed integrated decisioning platform offers banks the connective tissue — to effectively navigate the crisis and beyond. It allows banks to provide end-to-end process owners an unmatched level of transparency and control over their processes.

Using an accelerated decisioning platform, banks can compliantly incorporate new and alternate sources of data; migrate to faster machine learning models and big data; and make decision and strategy changes quickly to react to the economy, competition, and consumer needs. These are exactly the capabilities needed to act with speed and agility to get through the crisis.

Together this gives banks the agility to overcome three of the largest challenges of being a lender in a time of crisis, that include:

- Integrating decisioning and policies to allow for rapid and efficient updating in the face of extreme change in competitive or economic conditions.

- Executing complex models fast enough to provide decisions and pricing optimized at the account level in real-time.

- Moving from successful experimentation with cutting-edge technologies and methodologies to real business change.

Finally, the journey to achieve this agility does not need to be long or arduous. By providing the right connective tissue and information flow between existing point solutions and infrastructure, the journey may be months rather than years, paving the way for improved customer acquisition, satisfaction, and value — throughout the crisis and beyond.

Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation.

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Corridor Platform is a leading decision workflow governance and automation capability designed by industry veterans to rapidly transform risk and marketing decisioning at banks, enabling them to leverage new data, AI and automation to create competitive excellence in revenue growth, risk control and operating efficiency in the age of digitization.

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