



US mortgage industry white paper

How digital mortgage solutions can help win the war against margin compression

By Micah Jindal, Billy Hart, and Nate Levin

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Summary

After a prolonged period of low interest rates, the 30-year fixed mortgage rate has risen, and is likely to stay at a higher level than we have seen for the last decade. Both bank and non-bank originators are feeling the impact, with originations, revenue, and profitability declining in line with historical patterns. Given these challenges, originators are looking for ways to sustain profitable growth and create a market advantage.

At the same time, borrowers are becoming more comfortable with digital solutions, with approximately 80% of potential borrowers stating they would consider completing an entire loan application online. In response to margin compression and emerging borrower needs, originators are introducing a range of digital solutions for the home-buying experience, including personalized product recommendations, direct data integration with borrower financial accounts, intelligent asset statement parsing, and automated workflows.

Still, many in the industry question if the investment in digital will lead to the intended results. To this end, Boston Consulting Group (BCG) reviewed its experiences in building and commercializing digital solutions with leading mortgage clients as well as results from more than 100 lenders on Blend's lending platform, a white label digital mortgage suite that processes more than 100,000 applications per month.

The initial evidence is positive: Digital initiatives have made a significant impact for originators. Some have made small investments (approximately 2% of the cost base), with expectations to see an increase in application completion rates of up to 20%, an improvement in loan officer productivity of up to 10%, a reduction in application turnaround time of 6-10 days, back-end process efficiencies of 2-5%, and an enhanced customer experience. One critical lesson we observed, however, is that implementation can be harder than expected. The most successful transformations have interwoven digital into the fabric of the entire organization, including marketing, sales, back-office operations, technology, risk and compliance, and integrations with third party partners.

In the future, digitization will continue to proliferate beyond just the application process. Digital lead generation with rich organic content that boosts traffic will continue to gain ground, particularly in mobile. Digital partnerships in the home-buying experience - such as with brokers, insurance agents, title and escrow officers and movers - will create a truly end-to-end experience. Moreover, seamless integrations with new third-party data sources will enable faster underwriting, closing and funding, ultimately making it almost instantaneous for a prospective borrower to obtain a loan.

PART I: Market Conditions

Interest rates have been rising, resulting in lower revenue for originators

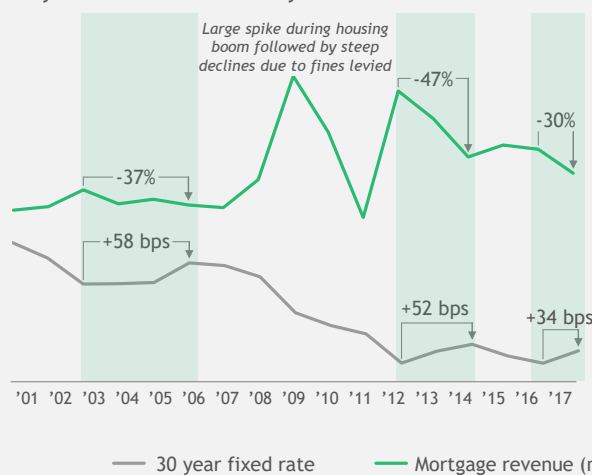
The Federal Reserve, seeing evidence of a healthy economy and decreasing unemployment, started raising the federal funds rate in December 2015. This has caused the 30-year fixed rate, a key indicator for mortgage rates in the United States, to increase in lockstep.ⁱ In rising rate environments, origination volume is depressed as fewer homeowners seek mortgages, and originator revenue declines at an even faster rate than origination volume as companies price competitively to maintain share.

A historical analysis of annual revenue from the top 11 originators that have publicly reported mortgage results over the past 17 years shows a strong inverse correlation between revenue and the 30-year fixed rate. We have seen evidence of this many times since 2000, including during the 2003-2006 rate increase (when revenue declined by 37%), in 2013-2014 when the Federal Reserve hinted at the end of quantitative easing (47% decrease in revenue), and during the most recent rise in rates, starting at the end of 2015 (30% decrease in revenue).ⁱⁱ Naturally, the driving force behind the decline in revenue is a decline in originations. During these periods, the broader market saw origination volume decreases of 22%, 35%, and 12% respectively, while these 11 originators saw origination decreases of 12%, 60%, and 15% respectively.ⁱⁱⁱ

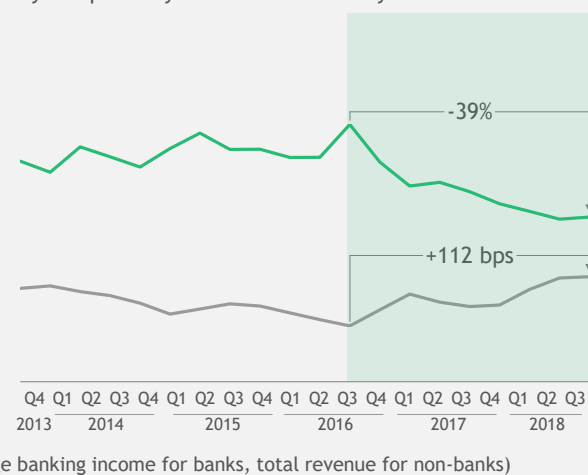
Looking more closely at the past two years on a quarterly basis, we can see that the 30-year fixed rate has increased by 112 basis points, resulting in quarterly revenue from originators falling by 39% from Q3 2016 to Q3 2018. (See Exhibit 1). During this same period, the market saw a 26% decline in origination volume, while the 11 originators saw a 33% decline. This fall in revenue and origination volume is in line with historical patterns, and origination volumes are expected to remain flat or continue to decline in 2019 as the Fed either maintains rates at or slightly increases them above current levels. In such an environment, originators will need to find new ways to maintain growth.^{iv}

EXHIBIT 1: Periods of moderately increasing rates have historically led to significant declines in mortgage revenue

Annual mortgage revenue and 30-yr fixed rate
16-year correlation with 30yr fixed rate of -0.7



Quarterly mortgage revenue and 30-yr fixed rate
5-year quarterly correlation with 30yr fixed rate of -0.7



Rising origination costs are compressing margins

Another challenge facing lenders in this rising rate environment is declining margins. Despite production revenue per loan increasing 20% between 2012 and 2017, production costs have risen more quickly, going from just over \$5,000 per loan in 2012 to more than \$8,000 per loan in 2017, a 57% increase. This has been largely attributed to rising personnel costs (accounting for 70% of cost increases), mostly as a result of loan officer compensation and investments in technology and risk and compliance.^v

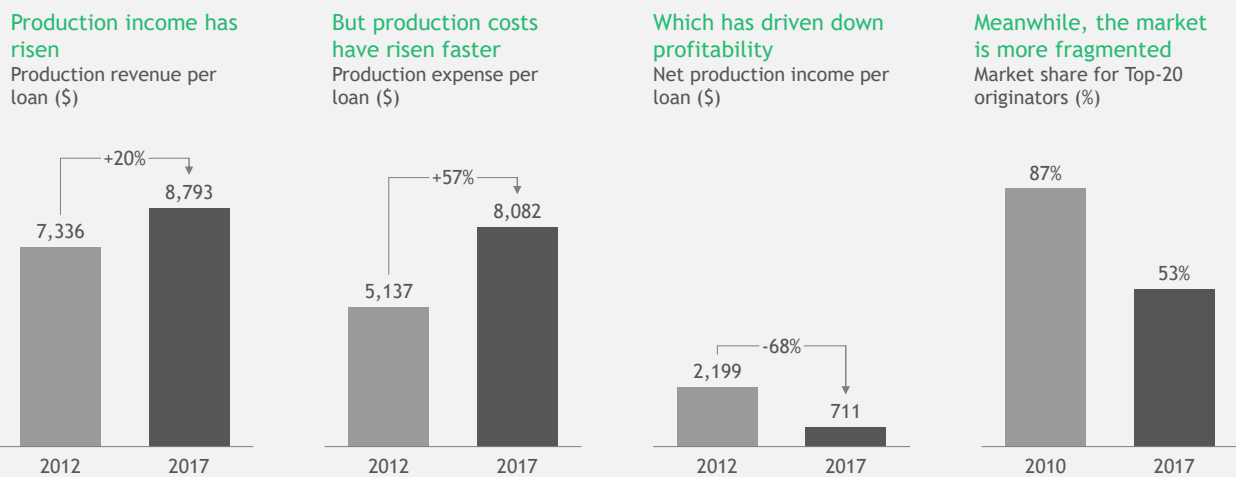
The outcome has been a 68% decline in net production income per loan during this period, leaving originators in a constant search for solutions to reduce personnel costs in an effort to restore margins. (See Exhibit 2).

Increased market fragmentation is fueling the competitive environment

In addition to declining revenue and margins, originators have had to face intensifying market competition since the financial crisis. From a high of 87% in 2010, market share among the top 20 originators has undergone a steady decline to just 53% by the end of 2017 (See Exhibit 2).^{vi}

Based on discussions with BCG’s contacts at leading banks and non-banks, 80% have strong growth ambitions heading into 2019, despite their acknowledgement that the entire market is expected to range from flat to declining volume and that competition is increasing. In this context, something has to give.

EXHIBIT 2: Loan profitability is declining and market is becoming more fragmented



PART II: Digital Solutions

Lenders look to digital solutions for competitive advantage

Against this background of declining revenue, compressed margins, and an increase in competition, originators must identify new ways to attract potential borrowers, differentiate themselves, and create a simple and streamlined experience.

Quicken Loans is an example of an originator that has already adopted digital practices with Rocket Mortgage, incorporating a borrower-friendly experience, digital application, reduced time to fund, and substantial marketing presence. At the start of 2018, Quicken became the nation's largest retail mortgage lender as a result of the combined successes of Rocket Mortgage and its traditional direct channel. In the first quarter of 2018, more than 98% of Quicken Loans' borrower base accessed Rocket Mortgage at some point in the process.^{vii}

Rocket Mortgage offers an initial mortgage approval with a high degree of confidence. It reduces human involvement in the origination process by prioritizing digitally-collected consumer financial data over physical document collection in the verification of borrower assets, income, and employment. Beyond automation, Quicken is focused on the right human touch, with borrower application questions phrased in simple language and call center contact easily available whenever a borrower is experiencing difficulties.

Digital solutions for the loan application process such as this are now widespread and being adopted by originators of all sizes. More than 60% of BCG's mortgage company clients have either introduced similar digital applications in the mortgage process or are actively working on doing so. Furthermore, the number of digital point solutions available for mortgage originators to consider is proliferating, with companies such as Blend and Roostify (lending platforms), Optimal Blue (secondary solutions), Velocify (customer relationship management), DocMagic (digital closing), and Plaid (data aggregation) gaining traction.

Digital solutions offer a better customer experience

BCG's recent client, market participant, and homebuyer surveys make it clear that digital home purchasing experiences are becoming the expected norm, and that certain features of these digital solutions have particularly high appeal to customers.

In a BCG survey of recent homebuyers, 79% said they would consider completing the entire loan application process online by themselves in the future.^{viii} A separate survey of lenders confirmed the same, with 81% saying that borrowers prefer online loan solutions, and 87% believing that those online solutions are faster than traditional processes.^{ix}

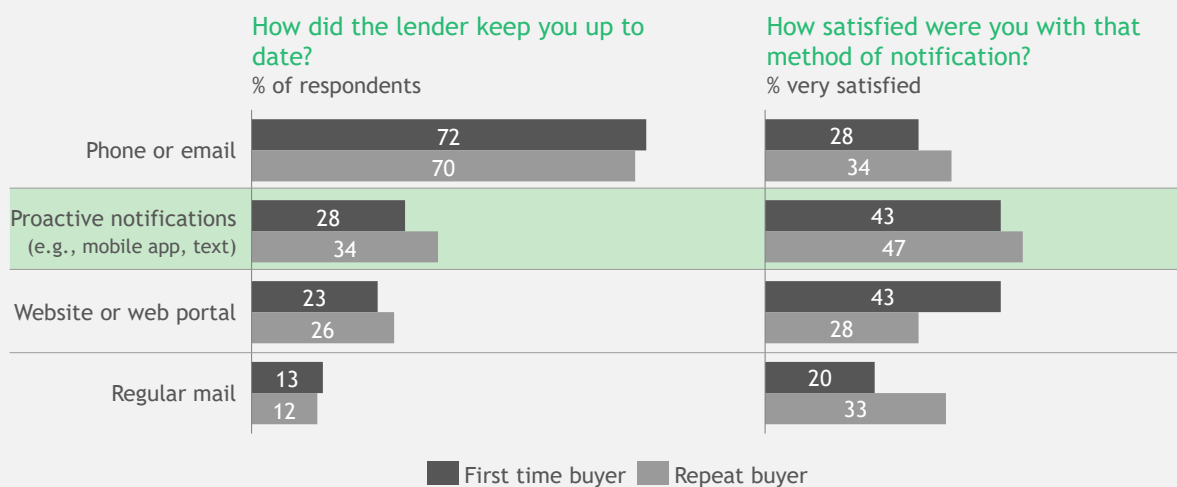
When BCG asked buyers what features appealed to them the most regarding a digital solution, the top five were: a checklist guiding them through the process, fees and rates that are easy to understand, online forms in simple language, instant application approval, and a mortgage calculator.^x

BCG also looked at communication best practices between the originator and the customer during the home-buying process. The highest customer satisfaction scores were associated with key features of digital mortgage solutions, such as the lender keeping the customer up to date through proactive notifications in a mobile app or text (e.g. loan status updates and document requests), rather than through phone, email, web, or regular mail. Up to 47% of those who received proactive notifications reported a high degree of satisfaction, yet these notifications are only available to 34% of customers. Conversely, the most common method of

keeping customers up to date is through phone or email (70-72% of the time); however, satisfaction levels through these channels were only 28-34%. (See Exhibit 3).

Finally, mobile is playing an increasingly important role for buyers in the application process. Activity measured on Blend’s platform indicates that one-third of applicants apply using a mobile device, and over 50% submit their application outside working hours.^{xi}

EXHIBIT 3: Proactive notifications are less commonly used but associated with higher overall satisfaction



Key features of digital mortgage solutions

The mortgage application process has no shortage of areas ripe for disruption in favor of efficiency, improved consumer experience, and more active borrower engagement. BCG examined 20 leading banks and non-banks as well as service providers in the home-buying ecosystem to see which digital features were being deployed throughout the home-buying journey. We identified 46 digital solutions features, falling into eight categories: (See Exhibit 4).

1. **Saving for a home:** Solutions helping potential buyers prepare financially for home ownership, with services such as automated savings plans
2. **Finding a home:** Search functions that help buyers find homes, locate real estate agents, and learn more about neighborhoods
3. **Managing expectations:** Features that guide and educate borrowers through the home purchase process by explaining loan terms, answering questions, providing affordability and payment calculators, and making product recommendations
4. **Connecting customers:** Channels that help customers reach the people they need for advice, such as loan officers, with live chat and digital appointment scheduling
5. **Early commitment:** Clear and early communications, with omni-channel integration and instant pre-qualifications or approvals

6. **Easy application:** Streamlined, intuitive, and guided applications with personal product recommendations and direct integration into the borrower's financial accounts
7. **Document management:** Easier document collection and tracking through checklists, digital documentation uploads, and e-signatures
8. **Support services:** Additional support post-closing, including payment, address updating services, maintenance management, and monitoring of utilities expenditure

Each of these features contributes to a more efficient process for both the borrower and the lender. For instance, personalized product recommendations based on the borrowers' financial history and specific home selection make it much simpler for borrowers to find mortgage products that best fit their financial means and housing needs. This leads to an increase in the number of applications started for lenders. Similarly, direct integration with a borrower's financial accounts and intelligent parsing of asset statements allow lenders to capture and verify borrower application data automatically, which reduces the number of physical documents required. This leads to higher application completion rates and a decrease in turnaround times.^{xii}

EXHIBIT 4: Digital features identified across 20 top lenders



Save for home

01. Automatic savings plan
02. Credit enhancement dashboard
03. Integrated financial planning



Home finder

04. Find a realtor
05. Find a home
06. Neighborhood news
07. Real time property valuation



Manage expectations

08. Consolidated mortgage info & links
09. Calculators (mortgage, refinance, etc.)
10. Loan terms comparison
11. First-time home buyers guide
12. Blog & information sharing
13. Video guides
14. FAQ section



Connect customers

15. Find a Branch
16. Find a Loan Officer
17. Online appointment scheduling with a LO
18. Contact with LO / expert (phone / email)
19. Live chat with LO / expert



Early commitment

20. Automated property valuation (using AVM)
21. Omni-channel integration
22. Proactive call from LO (if applicable)
23. Instant pre-qualification & pre-approval



Easy application

24. Dynamic & guided application
25. Personalized product recommendations
26. Online dashboard to manage application
27. Connection to financial accounts
28. Automatic appraisal vendor selection
29. Automatic title vendor selection validation
30. Automatic credit pulls



Easy application (continued)

31. Automatic tax information pulls
32. Automatic address matching function
33. Invite others to be involved (e.g., family)
34. Proactive notifications & status tracker
35. Electronic disbursement of funds
36. Online auto-pay of appraisal and other fees



Document management

37. Online document checklist
38. Upload documents online (pdf)
39. Upload pictures online (e.g., drivers license)
40. Online disclosure download
41. E-reading & E-consent
42. E-signature & E-closing



Support services

43. Homeowners insurance & warranty
44. Utilities expenses monitoring (PFM)
45. Maintenance of appliances / find handyman
46. Moving services (e.g., new address services)

BCG clients are investing in digital solutions and starting to see results with a proven approach

BCG clients are enhancing the customer experience by integrating many of the digital mortgage technologies mentioned above, and are now starting to see results. Based on these experiences, we hear one theme again and again: Ideating is easy, but implementation is hard.

To move beyond ideation, best-in-class lenders follow a clearly defined approach. They swiftly set out an end-state, "north star" vision for the journey they want their customers to experience. They then work backwards to identify and create quick wins that can change the customer experience and have an immediate impact. In one example, a BCG client found a set of quick wins in making its website more dynamic for customers by

supporting omni-channel communication and streamlining low value-add quality control process. These improvements resulted in a simpler customer experience and shorter turn time, all within 3 months of ideation.

Following quick wins, these lenders build a minimum viable experience in order to get to the market within 6 months, making continuous iterations based on customer feedback. Throughout the process, they have a dedicated cross-functional team of sales, operations, technology, and compliance personnel working on design and implementation.

In addition, leading lenders realize that reaping the benefits associated with digital solutions requires more than simply building and launching them into the market. The solutions need to be woven into the operating model of the organization and embedded into its culture, thereby creating a consistent experience across customer touchpoints and ensuring that the solutions are welcomed by the organization's employees. Without staff support, the solutions will not deliver the desired results.

For example, loan officers need to agree that a digital point-of-sale solution is good for their business. They should not view it as a threat, replacing what they currently do. Rather, it is a solution that allows them to spend more time building relationships with prospective customers by removing administrative tasks. Similarly, risk and compliance teams need to be included in the decision making process for a re-imagined customer experience to ensure "faster" does not equate to more risk. Across the different sets of functional employees (marketing, sales, operations, technology, risk and compliance), follow-up, communication, and training are essential during implementation to make sure old habits are broken and employee feedback is incorporated to further improve the borrower experience.

Taking this approach, one BCG regional bank client made investments in digital solutions that will generate new leads from the branch network and direct channel, increase conversion rates, and improve fulfillment efficiency. By increasing digital expenditure in technologies by 2% of total costs, this client aims to increase origination volume by 10% and reduce back-end costs by 2-5%.^{xiii} In this manner, the increased expenditures more than pay for themselves.

CASE STUDY

blend

Blend is one example of a company with which mortgage originators are partnering to deploy a new digital borrower experience

Blend's digital mortgage suite offers lenders a branded online experience, deployable in a relatively short time and integrated into the lender's existing technology stack. The consumer-facing experience captures borrower data in the application process through advanced design, facilitating connectivity to borrower financial accounts, and providing data and documents that are critical for verifying income, assets, and employment.

The lender-side platform allows loan officers and processors to manage their loan pipeline and advance each borrower's journey. Embedded machine learning

creates efficient downstream workflows for generating follow-ups and document requests, such as letters of explanation.

At present, Blend has more than 120 signed customers. One hundred of these customers have completed implementation, while the remaining companies are in the process of doing so. In total, the platform processes more than 100,000 applications per month and \$1 billion in loans every day.

Blend's implementation philosophy and process

Blend's professional services team assists newly signed customers with implementation over a period of three to four months on average, in four key phases: planning, rollout, scaling, and ongoing support.

In the planning phase, Blend assesses the loan production landscape of the client organization from a

technical and business process perspective, determining the means of best installing a core set of Blend features relevant to the needs of that particular business.

During the rollout phase, Blend works with client business leaders to provide the initial scope of functionality and to carry out a meaningful pilot to test that functionality in the hands of a select group of loan officers.

Taking lessons learned from the rollout phase, an agile approach is used to optimize deployment before scaling Blend to the broader enterprise. Through targeted communications and training, Blend advises new customers on best practices for achieving high adoption rates and maximizing value, while mitigating disruption from change.

Finally, and on an ongoing basis, Blend works with its clients' to define and execute a long-term functionality roadmap that extends the value of the partnership by adapting to a changing mortgage landscape.

Blend's impact on lenders of different types and sizes

Implementing point-of-sale (POS) solutions focused on user experience like Blend, with guided and intuitive step-by-step forms, has several benefits. In fact, various Blend customers have reported increases of up to 20% in application completion rates, increased loan officer productivity of up to 10%, average reductions in turnaround time of up to 10 days, and NPS scores higher than 60.

Increased loan officer productivity

A large nationwide non-bank lender generating an average of 5,000 loans per month, with approximately 1,200 retail loan officers, purchased Blend's suite because it wanted to provide an improved borrower experience while boosting its loan team's productivity. After a year with Blend, loan officers who used Blend consistently closed 10% more loans on average than those loan officers who didn't.

Enhanced borrower experience

A medium-sized non-bank lender successfully implemented Blend in less than two months with its 50 loan officers. The very first funded loan closed in just 13 days, with the average Blend loan closing 8 days faster than the lender's original application-to-close time. With Blend, the bank's teams have been able to meet closing dates 92% of the time for their 450+ loans per month, while 94% of their borrowers rate the application experience as one they would use again.

Increased loan quality for faster decision making

After just five months with Blend, a medium-sized mortgage company closing an average of 500 loans per month took two days off the average loan cycle and boosted its application completion rate by 13%, from 71% to 84%. Moreover, because loan teams are working with more complete loan applications from the time borrowers press the "submit" button, first-time underwriter approval jumped from 87.9% to 90.3%.

Source: Blend

PART III: CONCLUSION

What's next in the home-buying process?

The industry is still in the early stages of reimagining the digital customer journey for purchasing a mortgage, and up to this point has largely focused on improving the application process. Over the next few years, we will see many more digital transformations across the mortgage process and the home-buying experience more broadly. This will not only be instigated by originators, but also by emerging players in the real estate space, such as listing sites (e.g., HomeFinder) and iBuyers (e.g., Opendoor), that are trying to create end-to-end home-buying experiences for customers. For example, we could see:

- **Automated integrations with additional data sources**, such as with real estate agent transaction management platforms, title and escrow software, and necessary insurance, which would make

obtaining a loan a great deal easier. Borrowers would merely enter a name and social security number on their phone and be approved in minutes.

- **Greater integration across home-buying, loan buying, and home ownership processes** – imagine near-simultaneous acceptance of a customer's bid on a home and loan approval, or move assistance upon closing that helps borrowers prepare for the move by changing their address and selling their existing home.
- **Digital servicing**, as white-label solutions currently being developed and implemented allow consumers to make payments, track history, understand financial impact of home improvement to their home's value, and perform self-service functions.

Suffice to say the home-buying process will look very different from its current form. And as the mortgage process becomes more digitized and efficient, personnel will be able to allocate more time to building relationships and coaching buyers throughout, and less time on administrative tasks, further improving the customer experience.

Key takeaways:

- Rising interest rates and a shrinking market threaten lender revenue and margins, but also present an opportunity to capture market share in a purchase market where differentiation and customer experience becomes paramount.
- Originators of all sizes are increasingly turning to digital solutions as they look to improve the customer experience and meet customer expectations throughout the home-buying journey.
- Digital solutions have bottom line benefits: they can increase the number of high-quality leads, shorten application turnaround times, increase pull-through rates, raise the productivity of loan officers, and boost fulfillment efficiency.
- However, implementation of digital solutions alone will not lead to the desired results. It is just as important to reset the operating model and get buy-in from employees for new ways of working.

How lenders can get started with digital solutions

There are five concrete steps mortgage originators can take to implement digital solutions:

1. Decide where to start: in your direct-to-consumer and/or retail loan officer channel, and define specific areas where you want to create a unique value proposition, and where you just want to keep pace.
2. Re-evaluate the end-to-end customer journey for purchasing a home and a loan and identify where digital solutions can improve the customer experience, raise productivity, or boost efficiency.
3. Determine when to build experiences and technologies internally, and when it is necessary to create a "best of breed" ecosystem with external partners.
4. Work backwards to a minimal viable experience that can be launched in as little as 3 months and fully realized within 6-12 months.
5. Prioritize going live quickly and iterating vs. attempting to build the perfect solution on day one.

About the authors:

Micah Jindal is a Partner and Managing Director in the Los Angeles office of Boston Consulting Group and head of the North American Mortgage Practice. You may contact him at jindal.micah@bcg.com.

Billy Hart is a Project Leader in the Los Angeles office of Boston Consulting Group. You may contact him at hart.billy@bcg.com.

Nate Levin is a Senior Venture Architect in the Manhattan Beach office of BCG Digital Ventures. You may contact him at nate.levin@bcgdv.com.

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ⁱ Federal Reserve Bank; IMF

ⁱⁱ Revenue is a sum of Mortgage Banking Income from 7 banks in the top 25 originators (Wells Fargo, Bank of America, US Bancorp, BB&T, Fifth Third, Huntington Bancshares, Regions Financial) and Total Revenue for 4 non-bank originators (Flagstar, Hilltop, Impac Mortgage, Provident); sample and time period selected for data completeness; data includes servicing revenue; Source: SNL, S&P Capital IQ; BCG analysis

ⁱⁱⁱ Inside Mortgage Finance, 2018; data set incomplete for the entire bank and non-bank set for 2003-2006 period, and in that period includes only Wells Fargo, Bank of America, US Bancorp, and Flagstar

^{iv} Quarterly revenue is a sum of Mortgage Banking Income from 6 banks in the top 25 originators (Wells Fargo, US Bancorp, BB&T, Fifth Third, Huntington Bancshares, Regions Financial) and Total Revenue for 2 non-bank originators (Flagstar, Hilltop); sample and time period selected for data completeness; data includes servicing revenue; Source: SNL, Inside Mortgage Finance, S&P Capital IQ; BCG analysis

^v Loan production revenue includes origination fees, net secondary marketing income, net warehousing income, and other origination-related revenue. Fully-loaded loan production expense includes personnel expenses, occupancy and equipment and miscellaneous expenses for sales, fulfillment and post-closing activity. Also includes corporate allocations. Source: MBA; BCG analysis

^{vi} Mortgage Bankers Performance Report Q3 2017, Mortgage Bankers Association

^{vii} Quicken Loans Press Release, May 2, 2018.

^{viii} BCG general market survey conducted March-April 2018, including 805 prospective and recent borrowers

^{ix} A Dimensional Research survey conducted in August 2018 of lending professionals and IT experts

^x BCG general market survey conducted March-April 2018, including 303 recent borrowers

^{xi} Blend Analysis

^{xii} BCG US Mortgage Performance Report, Q2 2018

^{xiii} BCG Analysis