ACCELERATING DIGITAL TRANSFORMATION IN THE HEATED MORTGAGE INDUSTRY
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The mortgage industry has pursued digital transformation to better meet its customers’ needs — just not always with a sense of urgency.

The pandemic has sped up this often slow corporate metabolism. Out of necessity, companies have accelerated their shifts to new technologies as the global pandemic penalized the physical and rewarded the digital.

Government stimulus packages, eviction moratoriums, and forbearance programs all helped stabilize borrowers and mortgage providers and prevented an industry collapse. Central banks worldwide lowered interest rates to stimulate the economy, which led to record mortgage volumes.¹ Government measures in the U.K. and falling unemployment rates in Australia fueled demand in those countries.²,³ An inventory shortage of nearly 4 million homes in the U.S. pushed prices higher — a 19% year-over-year increase in April 2021, the 110th consecutive month of gain.⁴,⁵

The industry changes go beyond just the sheer volumes though. An increase in remote working has also led to significant, long-lasting changes to housing markets, such as demand for larger homes and geographic shifts.⁶ Higher housing prices helped existing borrowers with increased home equity, while pricing others out of the market.

Mortgage providers that spent on digital infrastructure capitalized on their investments during the crisis, while those tied to physical paperwork lost new business. Instead of just surviving, many companies leapfrogged their competitors using new digital capabilities, and those companies will continue to race ahead in this new — and still evolving — mortgage market.⁷
KEY SURVEY FINDINGS

Mortgage providers worldwide have accelerated the pace of their digital transformation during the past year — often simply to stay relevant to their customers. However, the results of Infosys’ global survey of mortgage providers found that this technological sprint offered benefits beyond mere survival. Further analysis of our survey responses shows that the faster these firms evolve, the greater their profitability. While firms remain confident that their investments in digital transformation will pay off, a number of factors could impede progress including funding.

Let’s take a close look at our seven key survey findings:

01 Profitability increased despite the crisis
More than two-thirds (69%) of mortgage provider respondents say their organization’s profits increased from the previous year.

02 Financial outcomes, diversification, and customers will be prioritized
Post-pandemic, respondents say they will prioritize diversification and focus on their customers and financial outcomes.

03 Mortgage providers rapidly accelerated digital transformation
Nearly all respondents (92%) claim their firms have at least doubled their pace of digital transformation in the past 12 months — and nearly 20% have at least quadrupled their pace during the past 12 months.

Our results suggest that this technological sprint is linked to financial outcomes — the more digitally transformed the mortgage provider, the greater the likelihood of increased profitability.

04 Confidence is high despite rising pressure
Most respondents (87%) have a strong positive sentiment about the industry’s ability to transform and meet customer needs.

05 Challenges to digital transformation remain
The primary hurdles identified in our survey are insufficient budgets and a lack of partnerships.

Ten percent of respondents still have high amounts of paper usage in their mortgage application processes. Only 4% of respondents were fully digital.

06 Digital focus and investments require a clear strategy
More than 85% of respondents plan to upgrade technology. Nearly 90% indicated they are investing in internet of things and blockchain.

07 Industry visionaries invest in digital transformation
Respondents who feel their organizations are well-equipped to meet changing consumer demands are more likely to increase investments in digital transformation initiatives and technologies.
In March 2021, Infosys surveyed financial services firms to better understand their digital transformation efforts and the impacts of various technologies and initiatives on their strategic objectives.

The survey also looked at how those strategic objectives are expected to change in a post-COVID-19 era.

The data was collected from a global survey of 1,000 financial services industry executives. A subset — 308 respondents — represents mortgage providers from banks and nonbanks. The respondents include the C-suite and the heads of functions and technologies.

The companies surveyed each have assets of more than US$1 billion and are based in the U.S., U.K., Germany, France, Ireland, the Nordics, Australia, and New Zealand. (See Figure 1.)

The Infosys survey’s goal is to identify the financial services industry’s largest digital challenges, examine where executives plan to invest in their organizations, and understand when those investments might mature. The report also provides benchmarks for firms on their strategic digital initiatives.
KEY FINDING 1

PROFITABILITY ROSE IN THE FACE OF THE CRISIS

Despite challenges with customer interactions and the shift to remote working, 69% of respondents in our global survey told us that their mortgage firms’ profits increased in the past 12 months.

Figure 2: Refinancing spiked as 30-year U.S. fixed-rate mortgage rates declined

Source: Mortgage Bankers Association, Freddie Mac
Just before COVID-19, the mortgage industry was reeling from low profitability. More recently, profits have surged because of the escalating demand for new and refinanced mortgages (see Figure 2). The average number of loans per mortgage provider increased from 1,799 in the fourth quarter of 2018 to a high of 5,049 in the fourth quarter of 2020. This increase — coupled with widening spreads and borrowers taking advantage of government-induced measures — fed into profitability. The pandemic-created recession and the widespread job loss did not bring that to a halt.

Sixteen percent of respondents report an increase of 6 percentage points or more. However, only half that number (8%) say their company’s profits dropped by at least 6 percentage points.

This profitability is particularly notable since mortgage providers face escalating operational costs. Eighty-seven percent of respondents say those origination costs increased, while 82% report that operational servicing costs were higher (see Figure 3). Much of this can be attributed to the numerous pandemic-era regulatory changes in many parts of the world, aimed at protecting borrowers. These regulations increased the cost of systems and processes, while lockdowns made running remote contact centers more expensive. Since demand for mortgages remains high, most of these costs have been passed on to customers.
Mortgage providers have wanted to improve the customer buying experience for years. Changing consumer behavior and an openness to, and demand for, digital experiences have caused minor waves of disruption throughout the industry.

The pandemic has now brought that aspiration to the top of the agenda. Our survey data shows that mortgage providers are focusing on both their customers and financially driven outcomes, while also prioritizing diversification.

These firms plan to concentrate on their customers over the next 24 months — and continue to do so remotely. Mortgage providers are investing for the future by keeping the customer at the center of the lending process. Electronic closing, remote online notarization, and tools to process customer information remotely are not temporary solutions; spending on these is expected to continue even after the pandemic has receded.

Mortgage providers, overall, have shifted their strategic objectives to concentrate more intently on profitability (see Figure 4). They are looking to become more agile and diversify across market segments and differentiated business models. At the same time, firms have moved away from innovation and partnerships, according to survey results.
KEY FINDING 2

As the pandemic lingers, our survey results suggest that mortgage providers want to increase their social impact and promote financial wellness and inclusion.

Given that mortgage providers continue to prioritize growth and profitability as well, there is somewhat of a balancing act needed over the next 24 months to achieve all the objectives. However, the drive for higher profits is supported by a more optimistic economic outlook. Nearly three-quarters of respondents say they do not expect the rate of defaults to increase in the next year as demand increases and credit spreads remain wide.

Mortgage providers have suffered from low profitability over the past few years because of falling mortgage rates, the escalating cost of loan origination, and slowdown in sales because of high home prices. In fact, in the U.K., the 15 biggest lenders were engaged in a price war, which resulted in lower profit margins. Some small lenders even exited the market. A decline in outstanding mortgages didn’t help either. In the U.S., outstanding residential mortgages fell from US$11.3 trillion in 2007, just prior to the Great Recession, to US$10.9 trillion at the end of 2018. That decline of 19% doesn’t even consider inflation. Profitability per loan originated surged briefly before the pandemic but quickly fell (see Figure 5).

![Figure 5. Profitability surged briefly](image-url)
Interestingly, in our survey results, the C-suite and heads of departments sometimes differed on strategic priorities (see Figure 6). C-suite respondents believe enhancing customer experience is among the most important objectives during the next 24 months, while the heads of departments consider it to be among the least critical. The opposite was true of efforts to diversify into new regions and demographics. Heads of departments say that should be a greater priority than those in the C-suite. Also, revenue growth is a higher priority for heads of departments.

“Whilst investment in customer experience and driving down cost of origination and operations seem mutually exclusive, our experience has been that both can be achieved with a well-designed digital transformation program. Our Now-Next-North approach provides short-term savings and efficiencies, allowing for continued investment in digitization.”

Micha Helbig
Vice President, Regional Head – Financial Services, Infosys
MORTGAGE PROVIDERS ACCELERATED DIGITAL TRANSFORMATION

The often tradition-bound mortgage industry is not typically perceived as a hotbed of digital transformation. However, the pandemic has led to a surge in digital initiatives among mortgage providers. Almost all (97%) of those surveyed have at least doubled their pace of digital transformation during the past 12 months (see Figure 7). Nearly half have more than tripled their pace, and nearly a fifth have at least quadrupled the speed of their efforts. This pace of change is important not just for future profits but also for today’s balance sheets.

Our survey results suggest that there is a link between the speed of a company’s digital transformation and its profitability. Respondents who said their mortgage firms accelerated digital transformation by four times their previous pace were likely to see profits about 2.4 percentage points higher than the average. The data also showed a correlation on the opposite end: Firms that slowed their digital transformation twofold were likely to see profits nearly 10 percentage points lower against the average. The emphasis on digital acceleration couldn’t be more obvious — mortgage providers that don’t invest in digital transformation risk becoming irrelevant in the future.

Figure 7. Fifty percent of mortgage providers at least tripled their digital transformation in the past 12 months

Q. During the last 12 months, did your digital transformation journey accelerate or decelerate?

Almost all (97%) of those surveyed have at least doubled their pace of digital transformation during the past 12 months (see Figure 7).
“Digital transformation has accelerated during the last 12 months. Like your survey found, the acceleration was not just for a long-term strategic objective but also for the short-term needs of meeting the industry’s condition. For instance, unprecedented volumes required better scale and accelerated a move to cloud-based technologies for many companies in the mortgage industry. Processes that were people- or paper-driven had to be modified and, in most cases, reimagined to fit a remote/all-digital interaction model. Take, for example, eNotes and eClosings for the U.S. housing industry. We saw significant acceleration there, as with other parts of the mortgage origination and servicing business processes.”

Prabhakar Bhogaraju
Executive Vice President, Head of Strategy & Product Development
FinLocker

Although digital transformation is an industrywide trend, the reasons for these initiatives vary. Our survey found that changing the business culture, building operational efficiencies, increasing productivity, and creating differentiated business models were the most important reasons for digital transformation. There were, however, regional differences (see Figure 8). U.S. respondents did not consider operational efficiency to be a significant driver of digital transformation, but it was ranked among the top benefits by those in Europe and in the Australia-New Zealand (ANZ) region.
KEY FINDING 4

CONFIDENCE IS HIGH DESPITE RISING PRESSURE

Even though the global economy has not yet fully recovered, our survey shows that the surge in digitization has increased the confidence of mortgage providers.

Nearly 90% of respondents say they are positive about the industry’s ability to transform and meet customer needs, while half are extremely confident (see Figure 9).

Along with this sense of confidence, nearly half of respondents believe they are very well-equipped to cater to changing customer and industry demands. And nearly 90% feel their business is well-equipped for the future. Despite this overall positivity, mortgage providers are feeling the strain caused by this rapid acceleration. Forty percent of respondents say the pressure to transform digitally has increased significantly over the past 12 months (see Figure 10).
KEY FINDING 5

CHALLENGES TO DIGITAL TRANSFORMATION STILL NEED TO BE OVERCOME

While digital transformation is accelerating at a faster pace for most companies, the industry still faces internal challenges to this transition (see Figure 11). The primary hurdles identified are insufficient budgets and a lack of partnerships.

**Figure 11. Funding and a lack of partnerships are the top challenges to digital transformation**

Please rate the challenges you face in progressing digital transformation within your business.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Most challenging</th>
<th>Fairly challenging</th>
<th>Challenging</th>
<th>Slightly challenging</th>
<th>Not at all challenging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient budgets</td>
<td>36%</td>
<td>38%</td>
<td>21%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Lack of partnerships</td>
<td>36%</td>
<td>39%</td>
<td>18%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>Security, compliance, and regulatory</td>
<td>35%</td>
<td>38%</td>
<td>20%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Complexity of IT infrastructure integration</td>
<td>34%</td>
<td>38%</td>
<td>20%</td>
<td>8%</td>
<td>1%</td>
</tr>
<tr>
<td>Lack of skills and new ideas</td>
<td>33%</td>
<td>40%</td>
<td>22%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Lack of corporate vision</td>
<td>32%</td>
<td>39%</td>
<td>23%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>Inability to experiment quickly</td>
<td>31%</td>
<td>37%</td>
<td>26%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>Business and IT disconnect</td>
<td>31%</td>
<td>37%</td>
<td>28%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Competition from fintech/Big Tech</td>
<td>30%</td>
<td>44%</td>
<td>19%</td>
<td>7%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Respondents in Europe and ANZ view lack of partnerships and lack of skills and ideas as the top challenges (see Figure 12). U.S. mortgage providers consider budgets to be the primary impediment.

Although many respondents ranked budget issues as a major concern, there is some disagreement. Unlike the heads of departments, the C-suite does not consider budget allocations an impediment (see Figure 13). The opposite is true for a lack of skills and ideas. C-suite respondents say this is the most challenging, yet the heads of departments do not view this as a significant hurdle.

Fintechs pose another set of problems, according to the survey. While they were not seen as a considerable challenge, these tech upstarts seem to weigh on the minds of respondents.
“Digital transformation is fundamentally a business transformation issue, with many stakeholders, intersecting business models, and compliance-regulation requirements. Companies that approach digital transformation as a technology upgrade or merely digitize existing paper-based processes will find it challenging to get a return on their investment. The second challenge we see is that a modern technology stack that underpins most digital transformation requires sophisticated engineering to realize its full potential. Getting into transformation initiatives without the right skills for CI/CD, DevOps, InfoSec engineering can really slow you down, create friction for product development, and result in poor employee morale, on top of missed business opportunities in the market.”

Prabhakar Bhogaraju
Executive Vice President, Head of Strategy & Product Development
FinLocker

Figure 13. Business and IT leaders don’t see eye-to-eye on many digital transformation challenges
What percentage of the mortgage application process at your organization is digital?

Q.

- Fully digital: 4%
- 76% to 99% digitized: 9%
- 75% digitized: 42%
- 50% digitized: 34%
- 25% digitized: 10%
- No digitization: 0.3%

With the embrace of digital technology comes the difficulties of integrating the new and the old. However, IT and business top brass do not appear to be communicating about the seriousness of the challenges. IT C-suite respondents view the complexity of this infrastructure integration as a primary challenge. Meanwhile, the business C-suite respondents consider it to be the least of their problems.

Our survey also found that 10% of respondents still have high paper usage in their mortgage application process; the industry is one of the most paper-intensive segments of the financial services sector.

The average U.S. mortgage required 300 pages of documents before the housing crash of 2008, according to Bill Emerson, vice chairman of Quicken Loans. This ballooned to 800 pages in 2018, owing to new regulations. For those respondents who have yet to embark on their digital transformation journey, we expect the challenges to be significant. But it appears that most mortgage providers fall into a middle ground, with just 4% of respondents being fully digital (see Figure 14).

The lack of automated processes to manage those documents restricts a mortgage provider’s ability to collect accurate and complete customer data and can affect loan delivery. For customers who are offered a hybrid offline and online touch point, the absence of an end-to-end loan application process makes it tedious and cumbersome. This also results in longer loan processing times. On average, it took 49 days to close a loan in April 2021.

Digitization can help alleviate these issues. For example, artificial intelligence (AI) and machine learning (ML) is being used to automate various functions in the mortgage process and can help reduce the customer’s efforts by 97%. Take Select Portfolio Servicing (SPS), for example. The company has been working to transform the mortgage servicing industry digitally. SPS has improved the customer experience by translating documents into data points and data points into usable information.

The companies that are using these technologies have already seen the benefits, according to our survey. On further analysis of survey responses, our data concluded that companies that have less than 25% of the mortgage application process digitized are more likely to see their profits decline (see Figure 15). On the other hand, providers with 75% or more of the process digitized were more likely to have profits increase by more than 6% during the past year.
Figure 15. Firms with higher levels of digitization of mortgage applications likely to see higher profits

Cited percentage change in mortgage provider profit from last year

- Less than 25% of mortgage application processes digitized
- 50% of mortgage application processes digitized
- 75% of mortgage application processes digitized
- More than 75% of mortgage application processes digitized

“Questioning the status quo of why things are done a certain way is a valuable exercise during transformation. It can be frustrating to ask the “five whys,” but the process helps to identify what low-value steps can be disintermediated and how the business can improve outcomes for the customer and the firm. On the human capital side, businesses should look for creative ways to grow talent, attract talent from diverse backgrounds, and train new hires with tools and mentorship to help them expand their skill set and succeed.”

Prabhakar Bhogaraju
Executive Vice President, Head of Strategy & Product Development
FinLocker
KEY FINDING 6

DIGITAL FOCUS AND INVESTMENTS REQUIRE A CLEAR STRATEGY

To address the challenging environment of the past 12 months, mortgage providers are focusing on design thinking, innovation hubs, and workplace transformation initiatives (see Figure 16). Their interest in improving agility has taken a back seat for now. This is surprising, given that agility helps improve customer experience and customer journeys — the imperatives for mortgage providers. Among all respondents, it was only the heads of IT functions that had contrasting responses — they considered Agile as the most important digital initiative and innovation hubs as the least.

The shift from the office to remote working was a significant adjustment in almost every sector. However, in the mortgage industry, the impact was felt beyond just employees, according to our survey. Respondents told us that this change slowed the turnaround times for mortgage processing (see Figure 17). Also, executives said that working from home has increased concerns about customer data security, resulted in higher application rejection rates, and led to more defaults. Interestingly, C-suite respondents did not think the move to remote working affected the default rates, but the heads of departments did.

In addition to digital initiatives, our survey identified the technologies that mortgage providers say are the most important for meeting their strategic objectives during the next 24 months (see Figure 18). Respondents ranked the internet of things (IoT) the highest, followed by analytics, cloud, and robotic process automation (RPA).
Q. How has remote working impacted the turnaround time of mortgage processing?

Figure 17. Remote working slowed the turnaround time of mortgage processing

<table>
<thead>
<tr>
<th>Impact</th>
<th>Higher defaults</th>
<th>Customer data security</th>
<th>Fewer applications</th>
<th>Higher application rejects</th>
<th>Incorrect valuations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant impact</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Fair impact</td>
<td>19%</td>
<td>16%</td>
<td>17%</td>
<td>15%</td>
<td>23%</td>
</tr>
<tr>
<td>Moderate impact</td>
<td>36%</td>
<td>43%</td>
<td>42%</td>
<td>46%</td>
<td>35%</td>
</tr>
<tr>
<td>Slight impact</td>
<td>43%</td>
<td>41%</td>
<td>40%</td>
<td>38%</td>
<td>41%</td>
</tr>
<tr>
<td>No impact</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Q. How important will each of these digital orientated technologies be to your strategic objectives?

Figure 18. Most of the digital technologies are considered important to strategic objectives

<table>
<thead>
<tr>
<th>Technology</th>
<th>Very important</th>
<th>Fairly important</th>
<th>Important</th>
<th>Slightly important</th>
<th>Not at all important</th>
</tr>
</thead>
<tbody>
<tr>
<td>IoT</td>
<td>41%</td>
<td>37%</td>
<td>20%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Data analytics</td>
<td>38%</td>
<td>42%</td>
<td>17%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Cloud infrastructure</td>
<td>37%</td>
<td>44%</td>
<td>17%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>and applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPA</td>
<td>37%</td>
<td>42%</td>
<td>17%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>37%</td>
<td>38%</td>
<td>22%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>AI/ML</td>
<td>36%</td>
<td>38%</td>
<td>23%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Blockchain</td>
<td>34%</td>
<td>45%</td>
<td>19%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>API microservices</td>
<td>33%</td>
<td>44%</td>
<td>21%</td>
<td>2%</td>
<td></td>
</tr>
</tbody>
</table>
While the applicability of IoT in the origination process is still at a nascent stage, we believe it has a larger applicability in the mortgage servicing market. When property is real estate owned, the responsibility of maintaining the property falls on the servicer until it is sold. This includes activities such as paying taxes and insurance, adjusting the temperature of the property, and maintaining the water pipeline and gas. The installation of IoT-enabled sensors that connect to energy optimization systems will help the servicer monitor the heating, ventilation, and air conditioning. Better maintenance allows the servicer to sell the property quicker.

Analytics is an obvious choice, given the volume of customer data that is needed to obtain a mortgage. Companies can use AI, ML, and natural language processing on petabytes of customer touchpoint data and then correlate those data points. The ultimate goal is to improve the customer experience.

Prioritizing cloud computing is also an unsurprising initiative. The financial services industry has started to shift its views on this technology. These companies now want to take advantage of the cloud’s security, scalability, and reliability. According to a recent Infosys study of 554 financial institutions, they plan to use the cloud to:

- Revolutionize traditional processes and reporting requirements through digitization and automation.
- Connect to open banking systems with alternative payment options.
- Expand threat detection and fraud prevention efforts.

“Mortgage originators and servicers are expecting volume spikes and pressure to maintain margins. Cloud computing will be increasingly looked at as a solution to provide scalability at a reduced cost. Overall, firms are looking at accelerating their move toward the cloud for cost and security reasons.”

Jay Nair
Senior Vice President, Infosys

As in other areas, our survey also found disagreements on the importance of some technologies (see Figure 19). The C-suite considers APIs to be the most important, while the heads of departments did not. The opposite was true of RPA, with heads of department respondents being more bullish.
AI and ML are already required for many applications in the mortgage value chain, from powering customer service chatbots to supporting anomaly detection in fraud systems. But previous studies show that many companies are not yet taking advantage of the benefits these technologies offer.²² Only 27% of senior executives said they have used AI tools for their mortgage business, according to a 2018 Fannie Mae survey.²³

Mortgage providers also consider cyberattacks to be less important to their strategic objectives. This is surprising, given that financial institutions are at significant risk due to the inherent value of the information they possess. A recent Infosys and Interbrand study revealed that the cumulative value at risk due to a cybersecurity breach can be as high as US$2.6 billion.²⁴

Although our survey showed that mortgage providers are investing in initiatives to make the work environment more efficient, companies are planning to reduce spending on some of those efforts (see Figure 20). Respondents indicate that investments in Agile and workplace transformation are slowing down, perhaps as organizations are already achieving or will achieve projected returns on investment (ROI) within a year.

Mortgage providers seem to have a broad interest in a variety of technologies while not relying too heavily on any single one (see Figure 21). What's surprising is that nearly 90% of respondents indicated they are currently investing in IoT and blockchain, although information on the size of those investments were not part of our survey.

Over the next 24 months, mortgage providers plan to invest more heavily in different technologies and related initiatives. Those priorities include AI, ML, APIs, and cybersecurity. Investments in design thinking approaches will also help mortgage providers understand customer needs better.
These investments are designed to help firms meet changing customer needs and ensure long-term relevancy. Yet for the businesses that fall behind in their digital transformation, the bigger concern might be survival.

Mortgage providers must make necessary investments to become future-ready. Yet, according to our survey, more than 63% expect an ROI of more than one year (see Figure 22). Certainly, some digital initiatives and technologies take longer to pay back that initial investment. However, companies can seek areas that are quicker to achieve ROI, such as APIs and RPA.

Figure 21. Investment is roughly the same across a broad spectrum of digital technologies

<table>
<thead>
<tr>
<th>Percentage of respondents that indicated an investment change over the next 24 months</th>
<th>Increase</th>
<th>Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI/ML</td>
<td>10</td>
<td>—</td>
</tr>
<tr>
<td>API microservices</td>
<td>90</td>
<td>—</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>89</td>
<td>—</td>
</tr>
<tr>
<td>Blockchain</td>
<td>89</td>
<td>—</td>
</tr>
<tr>
<td>Data analytics</td>
<td>89</td>
<td>—</td>
</tr>
<tr>
<td>RPA</td>
<td>88</td>
<td>—</td>
</tr>
<tr>
<td>IoT</td>
<td>88</td>
<td>—</td>
</tr>
<tr>
<td>Cloud infrastructure and applications</td>
<td>87</td>
<td>—</td>
</tr>
</tbody>
</table>

Figure 22. More than 63% expect an ROI of over a year on investments in digital technologies and initiatives

Q. When do you think you will achieve a return on investment from each of these digital orientated initiatives and technologies?
KEY FINDING 7

INDUSTRY VISIONARIES INVEST IN DIGITAL TRANSFORMATION

This growing confidence and preparedness among mortgage providers is evidently driving investments in digital technologies and initiatives. However, when analyzing our survey responses, we found that mortgage providers that considered themselves ill-equipped to meet changing consumer demands reported decreased investments in digital transformation initiatives and technologies (see Figure 23).

Figure 23. Well-equipped companies are spending more on digital investments

Expected change in investment over the next 24 months

- Decreased investments
- Increased investments by 0-2%
- Increased investments by 3-5%
- Increased investments by 6-10%
- Increased investments by more than 10%

Not equipped | Equipped | Well-equipped
---|---|---
47% | 25% | 9%
18% | 15% | 19%
29% | 28% | 30%
6% | 17% | 25%
0% | 14% | 17%
The opposite is true for those that feel well-equipped; they say they increased their digital investments. This was a surprising finding, as those providers that are ill-equipped to meet their customer demands today will have an even more difficult task in the future without the necessary investment and digital strategy in place.

These findings could highlight a future gap in the industry between those that invest and those that don’t, especially as companies move into an era where remote working will be the norm.

Even companies that considered digital transformation initiatives to be slightly important are at risk of falling behind, according to the data from our survey (see Figure 24). Correlations revealed that mortgage providers are more likely to decrease their digital investments in the next 24 months if they considered digital transformation only slightly important. However, those that considered digital transformation to be very important are more likely to increase investments.

The businesses that continue to invest will likely turn into industry visionaries of the near future. And those that don’t will find it difficult to catch up.
Mortgage providers have been forced to expand their digital capabilities to stay relevant and meet evolving customer demands. The pandemic has accelerated and intensified that change.

Although mortgage providers are highly confident about their abilities to adapt, there are still many challenges to overcome, such as reducing paper use and increasing automation with limited budgets. They must overcome these challenges while also competing with fintechs that are much more nimble, agile, and responsive. Now, mortgage providers need to continuously evolve and learn, and in effect, become what we call a Live Enterprise — a deceptively simple idea.²⁵ The model enables mature companies to adopt the best traits of a digital native business: Many small teams innovating while leveraging shared digital infrastructure and creating an environment of continuous evolution and learning. Successful implementation leads to services that are fast, efficient, and cost effective.

This is possible when the mortgage providers are digitally transformed, often through platforms.²⁶ These can simplify systems and enable flexibility, scalability, and efficiency. For example, Stater manages mortgage services while allowing the mortgage providers to focus on what they do best: lending.

An alternative solution is for mortgage providers to build capabilities in various developing technologies. For the mortgage process to be efficient, technology must be interwoven into existing systems. ML can consolidate borrower information, assess a borrower’s creditworthiness, automate document verification, predict prepayments and defaults, and even identify fraud. These automations help speed up the underwriting process. AI also helps give a voice to prospective borrowers with no credit history, thus increasing financial inclusion. Other technologies include blockchain for faster approvals and omnichannel lending capabilities for enhanced customer experience.

Digital technologies are pivotal across the mortgage value chain. However, many mortgage providers are not yet taking full advantage of the benefits these technologies offer and many others have only recently begun to seek the benefits. In fact, with the extent of plug-and-play and commercial off-the-shelf products available, mortgage providers can now move quickly on their digital transformation journey without the need to build infrastructure from scratch. The only caveat is how their existing core platform can best integrate with these new products to ensure compatibility and smooth interaction and information exchange in real time.

The pandemic accelerated much-needed digital transformation efforts among mortgage providers. But not all are ready to take on a complete transformational journey. Their success will be measured by how quickly they transform to help their customers through the remainder of this crisis. The next 24 months will determine if a different and more resilient mortgage ecosystem will emerge.
The mortgage industry was built on a traditional foundation, from personal interactions to hundreds of pages of paperwork. Manual processes were needed to connect with customers, notaries public, and tax authorities to complete the origination process. Digitization has slowly gained traction, but a streamlined process wasn’t seen as a priority. Customers don’t apply for mortgages frequently, so the often tedious process was less of a burden.

COVID-19, however, made digitization a necessity. As validated by our survey, nearly all mortgage industry respondents accelerated their pace of digital transformation. The pandemic has forced all stakeholders — including lenders, brokers, and notaries — to digitally engage with the customer. It is quite clear from our report that if mortgage providers don’t digitize, they become less competitive and stand to lose market share and margin. We at Infosys see clients looking to digitize their entire customer journeys, from origination to serving to default.

Digitization requires large investments in automation, process optimization, IT landscape simplification, and innovation — almost all of that in the service of better customer experience. Yet, it is difficult to grow revenue in the current market, particularly when interest rates remain at all-time lows. With such an unattractive revenue outlook, executives are often hesitant to make significant digital investments. Returns can be realized only when lenders increase their market share, not just improve efficiency. And that’s why lenders now need to focus on their customers’ digital needs. Our report shows that mortgage providers that invest heavily in digital technologies and initiatives reap benefits, while potentially the others may see their profits slip and risk losing out to more advanced competitors.

Although large mortgage providers are already investing in platform modernization and digitization, they also face risks and difficult choices. If these companies don’t move quickly, they could lose out to digital native competitors that can originate loans two to four weeks faster. That gap costs the legacy providers.

The approval process and serving of mortgages are not the competitive elements here. Understandably, mortgage providers want to retain their brands and continue their existing selling process, but that process must be optimized. Often, the creativity needed to find their financial headroom is discovered through collaboration with outsourcing and servicing partners.

Alternatively, mortgage providers can partner with a mutualized platform; they don’t actually need to digitize their entire business or technology operations. An API-enabled platform can help create a fully digitized straight through loan origination process — connecting with credit rating agencies, notaries, and tax authorities. In this case, mortgage providers can share investments so that they don’t need to keep up with all market developments and technologies, such as advances in optical character recognition. This also allows easier and faster collection of relevant data needed to originate a loan.

At Infosys, we believe better customer experience and speed will determine the survival of mortgage providers, particularly in a world where interest rates are not differentiating factors. Investments in an API-enabled platform, a design thinking-based customer journey, and AI will allow firms to close loans faster and appeal to changing customer expectations. The winners or losers in the next 24 months will not be based on their current size but how they think about technology and how fast they can digitize.

2. **March was HSBC’s strongest mortgage completion month in more than 40 years**, Michiel Willems, May 6, 2021, City A.M.

3. **Australia’s CBA expects home loan growth to push mortgage profit some 3% higher**, Paulina Duran, April 15, 2021, Reuters.

4. **The US is facing a shortage of nearly 4 million homes as builders struggle to meet exploding demand**, Grace Kay, April 16, 2021, Business Insider.

5. **Existing-home sales decline 2.7% in April**, Quintin Simmons, May 21, 2021, National Association of Realtors.


10. **Record mortgage borrowing as owners move or improve**, Kevin Peachey, May 4, 2021, BBC.

11. **Mortgage profitability hits all-time low in Q4**, Kelsey Ramirez, March 27, 2019, Housing Wire.

12. **More signs point to a softer housing market, even as mortgage rates fall**, Diana Olick, Aug. 13, 2019, CNBC.


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