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Using Advanced Analytics to Predict Consumer Behavior and Optimize Consumer Loan Strategies

A SourceMedia Research survey of bankers uncovers what makes pricing specialists three times more confident in their predictions

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SURVEY METHODOLOGY

To assess banks' priorities and growth targets for their consumer lending businesses, and to gauge the sophistication of their pricing, sales and portfolio management practices, the research unit of SourceMedia — the publisher of *American Banker* — conducted an online survey of 218 industry executives on behalf of Earnix in August 2016. About 16% of respondents work at banks with more than $100 billion of assets, 15% at banks with assets of $20 billion to $100 billion and 69% at banks with less than $20 billion of assets. About a fifth are chief executives or other c-suite officers, and the vast majority are senior executives at their institutions. All are involved in making decisions on consumer loan practices.

EXECUTIVE SUMMARY

The consumer lending industry is going through a technological turning point in this era of rapidly advancing computing power, interest rates that are rising but still low and intense competition for modest growth. A cadre of pioneering lenders is deploying powerful analytics to model consumer behavior and optimize pricing and risk, moving far beyond long-standing tactics like calibrating against rates posted by other banks. Such tools are giving these banks the confidence to pursue growth that some competitors don't recognize is available, and opening up a gap between lenders with fine-grained, actionable intelligence on their clientele and those making due with the clumsy intuitions afforded by conventional practices.

Smart lenders have overcome institutional resistance to change and embraced the revolution in analytics, capitalizing on the vast quantities of transaction, account, client and other data that already flows across their systems. They have realized that now is the time to innovate and use the insights their data makes possible to price with precision and claim business opportunities that were not visible in the past.

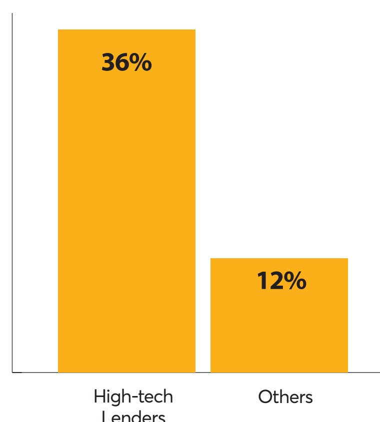
There is no question that bankers' hunger for revenue growth is intensifying. A recent SourceMedia Research/*American Banker* survey of senior bankers reveals aggressive targets for mortgage growth, even as the long-hoped-for revival of home equity lending is proving slow to materialize. Executives also report similarly high targets for auto loan, credit card and other consumer portfolios. Survey responses channel the daily pressure that many executives feel: Banks' top goal for consumer loan businesses is growing their portfolios.

Insights provided by analytics can help improve margins that have long been compressed amid such heated competition. However, while banks are universally adept at collecting enormous amounts of customer data, and many lenders — both large and small — have enthusiastically adopted a vital layer of analytics technology, many have not. Across the industry, survey responses show that pricing to competition, relying on past performance and Excel spreadsheets remain the norm.

To clarify the importance of analytics and how they drive profitability, SourceMedia Research categorized respondents according to their level of technological sophistication. The results were clear: Lenders that use advanced demand analytics to align pricing to bank goals — the key to optimizing margin and volume — are able to develop higher portfolio growth targets and express more confidence about their ability to manage risk and performance. In the home equity business, high-tech lenders are three times more likely to say they are very confident in their ability to predict and manage risk and profitability than less sophisticated counterparts (see Figure 1).

FIGURE 1. **Predictive Confidence by Technological Sophistication**

Respondents who say they are very confident in their ability to predict and manage the risk and profitability behavior of their home equity portfolios as economic and competitive circumstances change



Source: Banking Landscape 2016, commissioned by Earnix and conducted by SourceMedia Research/*American Banker*

Lenders that use analytics are growing faster, and with greater confidence, than their counterparts.

In the age of nearly inexhaustible computing power, software is readily available to model and predict consumer behavior from the vast data already available to firms about their customers' activity. Such tools can enable banks to forecast how borrowers will react to different rates, fees and other loan features — and therefore to make precise decisions about pricing and credit line assignments. And it shows: Lenders that use analytics are growing faster, and with greater confidence, than their counterparts.

HIGH-TECH LENDERS TAKE THE LEAD

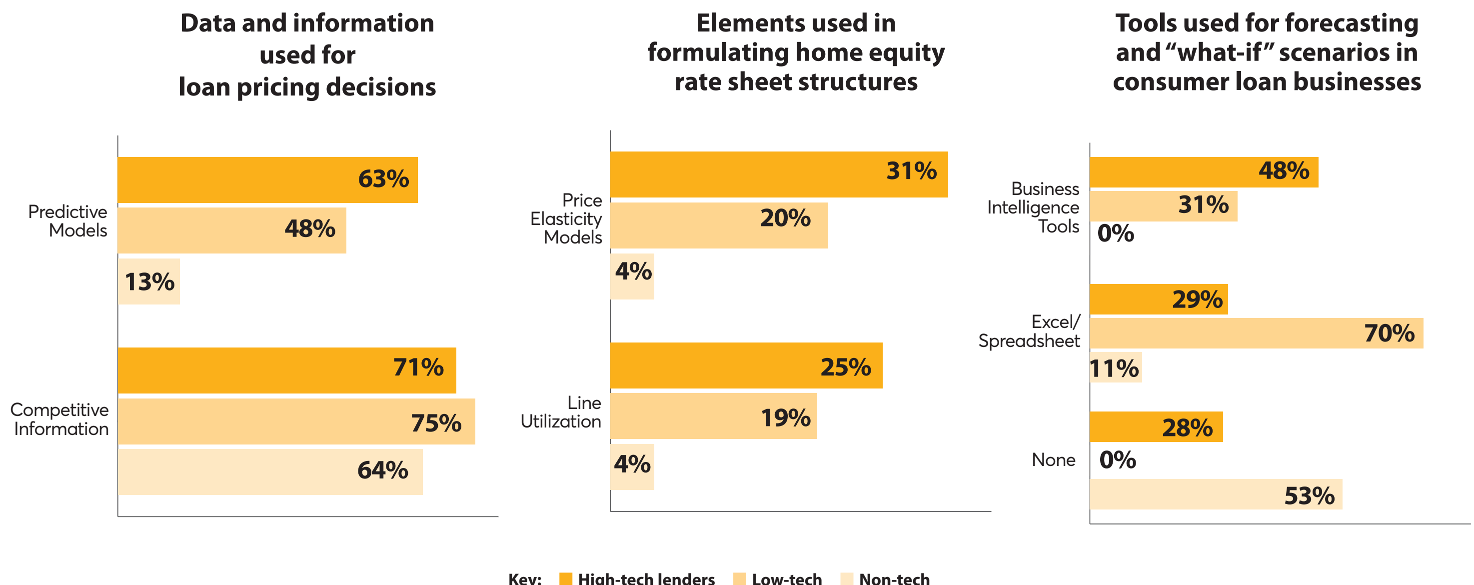
The consumer lending industry is sorting itself into technology-based camps, as innovative firms that increasingly embrace sophisticated analytics post market-leading growth forecasts while firms that have stuck with legacy practices are hamstrung by doubts about their ability to manage risk and performance.

SourceMedia Research divided survey respondents into high-tech, low-tech and non-tech groups based on the types of information they use to make pricing decisions; tools they use for forecasting and "what-if" scenarios; whether they use advanced analytics to model activation and utilization of home equity lines of credit; and the factors they use in formulating loan rate sheets. Overall, practice descriptions fit 37% into the high-tech category, 42% in the low-tech category and 22% in the non-tech category.

Naturally, the vast majority in each of the three groups use research on competitors to set prices. But while 63% of high-tech lenders also report using demand and other predictive models, just 13% of the non-tech group does. Similarly, about 31% of the high-tech group reports integrating price elasticity models into the makeup of their home equity rate sheets, compared with just 20% of the low-tech group and 4% of the non-tech group. Indeed, more than half of the non-tech group reports using no forecasting tools for consumer loan products at all, while 70% of the low-tech group reports relying on Excel or other spreadsheet software for forecasting and 48% of the high-tech group says their institutions has deployed specific business intelligence tools (see Figure 2).

FIGURE 2. **Lenders Segmented by the Technology They Use**

SourceMedia Research categorized respondents according to their level of technological sophistication. Here are some of the practices and tools that define them.



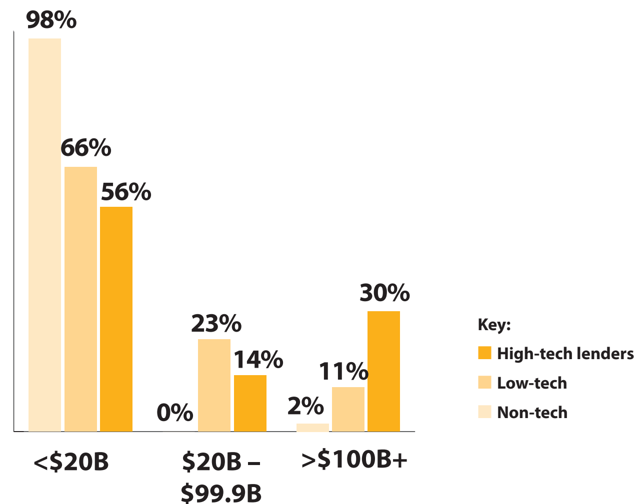
Source: Banking Landscape 2016, commissioned by Earnix and conducted by SourceMedia Research/*American Banker*

Newer online lenders have constructed their business models around analytics.

Deployment of advanced technology appears to be partly a function of the resources available to an institution. The highest percentage of non-tech respondents is among the smallest banks in the sample (see Figure 3).

FIGURE 3. **Technological Sophistication by Asset Size**

Survey respondents were divided into high-tech, low-tech and non-tech groups based on the types of information they use to make pricing decisions; tools they use for forecasting and "what-if" scenarios; whether they use advanced analytics to model activation and utilization of home equity lines of credit; and the factors they use in formulating loan rate sheets.



Source: Banking Landscape 2016, commissioned by Earnix and conducted by SourceMedia Research/*American Banker*

However, the presence of smaller institutions in the high-tech group shows that many lenders are upping their game across the size spectrum. Notably, newer online lenders have constructed their business models around analytics, and all banks face regulatory imperatives to enhance their modeling capacities to meet new standards for forecasting credit losses.

Whether or not lenders respond by adopting more sophisticated technology, the raw competitive pressure they are under is apparent in survey responses about growth targets. About 42% of executives in all groups say their bank has forecast an increase in its consumer loan portfolio of 5% or more over the next year, a relatively ambitious target when annual growth in the nation's gross domestic product hovers between 2% and 3%. Use of analytics appears to give lenders greater comfort in setting such aggressive lending goals, with about 53% of respondents at high-tech lenders reporting consumer loan growth targets of 5% or more, compared with 39% at low-tech lenders and 48% at non-tech lenders.

FOR MANY LENDERS, PRICING STRATEGY REMAINS IMPRECISE

As shown above, advanced risk analytics have a substantial foothold in consumer lending. But overall, the industry has been slow to embrace solutions that leverage available data to predict customer behavior and guide or determine everyday pricing and portfolio management decisions.

A few leading banks have invested heavily in cloud infrastructure and data management software to capture the deluge of digital information, says Earnix Principal Consultant Marc Trudeau. Nevertheless, nearly all bankers still have problems resolving these fundamental business issues:

- How will customers respond if I change my price?
- How can I use price to drive incremental volume so I can achieve aggressive growth goals?
- How should I respond when a competitor lowers price and is gaining market share?
- How can I offer relationship-based pricing?

Only about a third of bankers surveyed say their pricing strategy is oriented around the holistic approach of optimizing rate and volume mix.

In survey responses, some lenders acknowledge a lack of confidence in answering those very questions, and express concern about their ability to manage risk and profitability while competing with more advanced rivals. Elsewhere, perception appears to fall short of reality, with many lenders expressing satisfaction with conventional strategies and choosing not to set prices based on a solid foundation of data and analytics.

The optimal approach requires harnessing computing power to sift through data and render clear answers. Only about a third of bankers surveyed say their pricing strategy is oriented around the holistic approach of optimizing rate and volume mix. Meanwhile, a fifth report that their pricing strategy is to target a market share metric or that they simply price against competitors.

Even strategies to balance yields and volume can encompass a range of approaches – trial and error, running limited price tests and observing results and mining historical trends – that can be insufficient on their own. For example, the predictive capacity of historical trends will be eroded as interest rates rise and new competitors with disruptive strategies enter the marketplace.

Indeed, conventional approaches can require months of analysis. By the time this "new" information has been incorporated into a bank's pricing strategy, it may be outdated and out of step with market conditions, in stark contrast to analytics that can provide actionable intelligence in real time.

An analytics-based approach can generate more precise, responsive pricing, which can help banks take advantage of changes in the lending market as they happen. Currently, just 11% of respondents say they use continuous, real-time pricing in their home equity products, while 42% report changing prices quarterly or even less frequently.

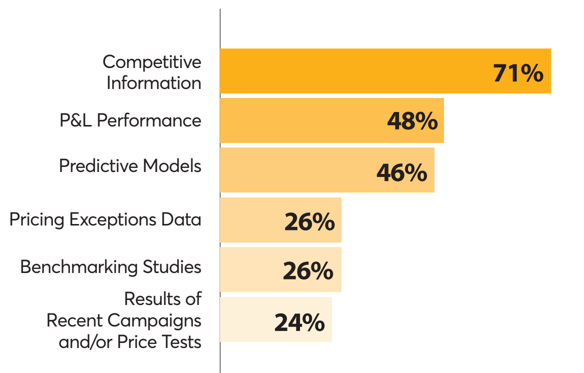
COMPETITIVE PRICING: AN INPUT, NOT A STRATEGY

"The competition's pricing is an important input to pricing models, including the impact of pricing changes on volume and revenue. But pricing to the competition is not a strategy, and will often prevent you from aligning your pricing to your goals," says Paul Vanden Heuvel, Principal Consultant at Earnix. "Banks may be set in their ways, but now is the time to change — and to leverage all available data in making pricing decisions."

That said, 46% of survey respondents say they used predictive models, with only 4% noting they use pricing optimization software. The majority rely heavily on competitive data (see Figures 4 and 5).

FIGURE 4. **Data Used in Loan Pricing**

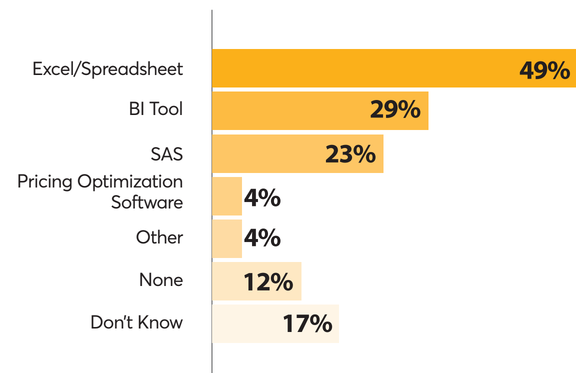
Q. What data and information do you/your institution use when making pricing decisions?



Source: Banking Landscape 2016, commissioned by Earnix and conducted by SourceMedia Research/*American Banker*

FIGURE 5. **Forecasting Tools**

Q. What tools do you currently use for forecasting and running "what-if" scenarios of your consumer loan products?



Source: Banking Landscape 2016, commissioned by Earnix and conducted by SourceMedia Research/*American Banker*

About 36% of respondents in the high-tech group say they are "very confident" in their ability to predict and manage risk and profitability in home equity, compared with 12% in the low-tech group and 13% in the non-tech group.

Even if banks have not yet widely adopted readily available pricing optimization software, they do appear willing to invest in growing their business: About 36% of respondents say they increased marketing budgets somewhat or significantly over the past year, in line with portfolio growth targets. Redirecting or even matching those funds with software investments may be justified in light of the potential to achieve improved business results.

MAXIMIZING THE OPPORTUNITY IN HOME EQUITY

Home equity businesses — which respondents say would be their second highest area of focus in the coming year, just after mortgages — could also be greatly improved by applying analytics-based decisions. But many lenders have a narrow view about how to improve performance: While more than half of respondents with a heavy focus on home equity say growth in portfolio balances is a top priority, just 23% say the same about credit line utilization — despite the capital cost of unused lines. (See Figure 6 for data on primary goals executives report for business lines they are focusing on.)

FIGURE 6. **Goals for Primary Loan Products**

Q. Thinking about the consumer lending products you rated as having a "high" or "very high" focus in the next 12 months, what are your institution's top two goals for these products in the next 12 months?

	Mortgage	Home Equity	Credit Card	Auto, Direct	Unsecured	Auto, Indirect
Loan Growth	62%	52%	29%	61%	35%	51%
Cross Sales	34%	36%	33%	45%	45%	28%
NIM Growth (revenue)	29%	24%	14%	15%	18%	13%
Digital Origination	19%	17%	14%	17%	24%	15%
Expense Reduction	15%	5%	2%	3%	10%	13%
Decrease Risk Exposure	13%	9%	9%	14%	18%	26%
New Product or Value Proposition Launch	7%	6%	13%	21%	14%	15%
Credit Line Utilization	N/A	23%	20%	N/A	N/A	N/A

Key:
- 30% or more
- 10%-29%
- Less than 10%

Source: Banking Landscape 2016, commissioned by Earnix and conducted by SourceMedia Research/*American Banker*

Customer analytics could help banks calibrate lines of credit. Modeling client behavior could determine that a borrower is likely to want or use a far smaller amount than the line for which she might qualify, allowing the lender to redirect capital to other business, decrease potential credit losses and improve financial results.

But just 18% of bankers surveyed say they use advanced analytics to model home equity line activation and utilization, even though such tools make bankers more confident about their readiness to navigate shifts in interest rate conditions and changes in the competitive landscape brought about by new entrants and innovations by forward-looking rivals (see Figure 1).

About 83% of executives who say they are apprehensive about their capacity to manage risk and profitability in home equity report that their institutions do not use advanced analytics at all. Making the same point in a different way, about 36% of respondents in the high-tech group say they are "very confident" in their ability to predict and manage risk and profitability in home equity, compared with 12% in the low-tech group and 13% in the non-tech group.

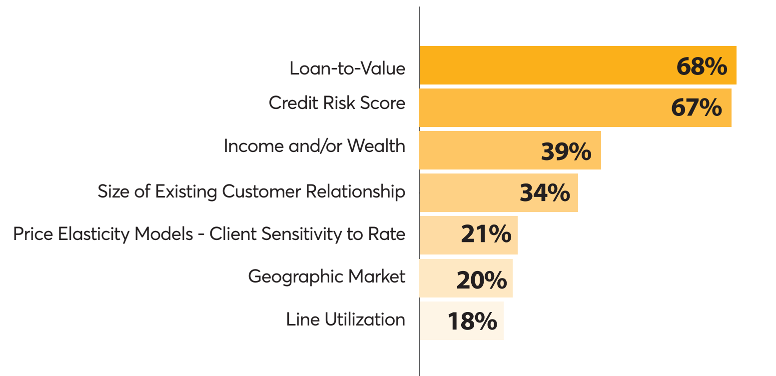
The bottom line is that without analytics-driven models of customer behavior, lenders are less able to predict how borrowers are likely to react to rates, fees and other loan features and to determine what offers to make.

Right software and analytics equips banks with sophisticated demand models that predict customer behavior and allow them to optimize pricing decisions.

To be sure, credit scores and loan-to-value ratios are dominant factors in making such decisions and formulating home equity line rate sheets (see Figure 7). But with just a fifth of respondents reporting they incorporate insight from price elasticity models that can forecast client sensitivity to rates shows that most banks are proceeding without vital, yet readily available business intelligence.

FIGURE 7. **Home Equity Rate Sheet Considerations**

Q. When making home equity pricing decisions, what elements are involved in determining your consumers loan rate sheet structures?



Source: Banking Landscape 2016, commissioned by Earnix and conducted by SourceMedia Research/*American Banker*

OUTLOOK AND RECOMMENDATIONS

Applying analytics can help banks manage to their goals while providing them the confidence to navigate an uncertain rate and risk environment — and ultimately, help them remain successful.

Banks must continue to balance the need for lending growth against the requirement to maintain strict risk profiles. While some of their competitors already use analytics to align pricing strategy with business goals, the majority of lenders — traditional and nontraditional — have not leveraged the data available to make better lending decisions.

The right software and analytics could place banks in the vanguard by equipping them with sophisticated demand models that predict customer behavior and allow them to optimize pricing decisions. When investigating a technology solution, consider one that:

- Comes with the high level of vendor support needed to assess existing systems and improve and build on them successfully
- Provides advanced data analysis tools, such as modeling, that can help the institution understand client behavior and predict performance
- Aggregates analytics into a simple software platform with an easy-to-use interface that makes running pricing scenarios quick and efficient

The days when only the largest banks could implement sophisticated data analytics are over. New technology and software-as-a-service (SaaS) models make predictive analytics accessible to even the smallest banks and credit unions, and have the potential to revolutionize the industry.

ABOUT EARNIX

Earnix integrated customer analytics software empowers financial services companies to achieve optimal business performance through data science and predictive analytics. The Earnix analytical solutions drive superior product, pricing and marketing decisions, while ensuring alignment with changing market dynamics. Earnix combines predictive modeling and optimization with real-time connectivity to core operational systems, bringing the power of analytic-driven decisions to every customer interaction. For more information visit **www.earnix.com.**

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