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If you want success with machine learning-enabled analytics, don't boil the ocean!

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Elena Christopher, Senior Vice President, Research

Defining Future Business Operations

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Citizens Bank reinvents collections segmentation and creates a trust-based foundation for smart analytics scale

Banking and financial services (BFS) firms continue to invest in technology-enabled digital change to impact their major performance levers of top-line growth, bottom-line performance, customer experience improvement, and risk and compliance. However, with a myriad of options and competing priorities, HFS has seen many well-intentioned programs get stuck at the pilot or proof of concept stage due to a lack of compelling results and an inability to track value. In the case of smart analytics, there is even more scrutiny around the explainability of artificial intelligence-generated decisions, which can add to the stall factor.

In our ongoing research to spotlight enterprise experiences with new operating models enabled by technology change agents, we interviewed Citizens Bank. Citizens has been reinventing itself with an emphasis on efficiency, process improvement, and return on equity. This Voice of the Customer report spotlights a facet of Citizens' transformation journey—its business operations-led initiative to reinvent its collections segmentation and outreach approach for auto and personal loans.

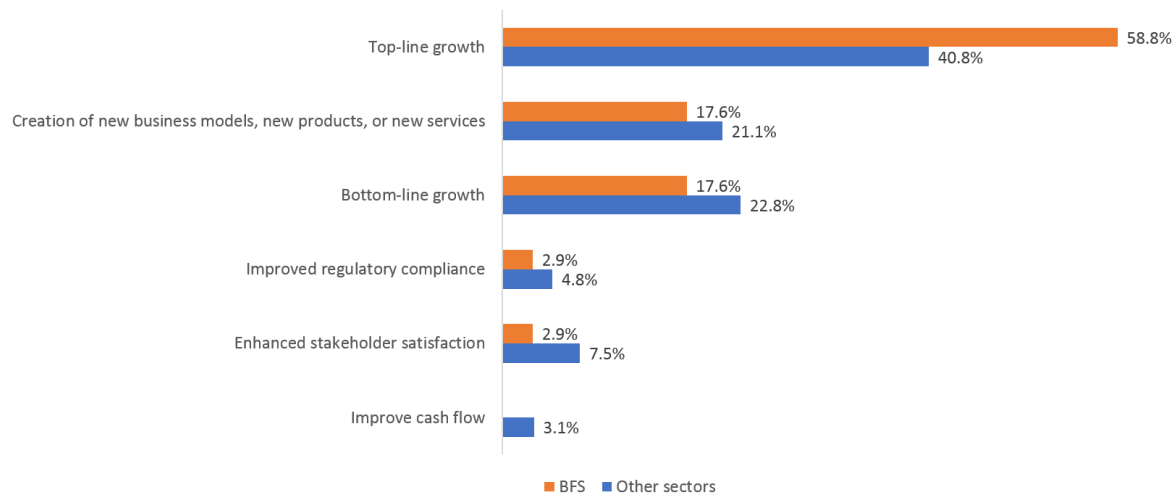
Banks need to temper their lofty goals for smart analytics with solid execution and scale plans

For banking and financial services firms that lived through the global financial crisis, the last 10+ years have been an exercise in adjustment and realignment. Firms continue to ensure they can run and profit from their traditional businesses while simultaneously investing in new models to help differentiate them in the face of loads of challenger banks and fintech competitors. One of the areas of great promise is “smart” analytics—analytics enabled by components of artificial intelligence (AI) to drive greater speed, accuracy, quality, and personalization in analysis and decisioning.

A [recent HFS study on data and analytics](#) asked respondents to identify the biggest potential impact of smart analytics over traditional analytics. Exhibit 1 shows the results, segmented by BFS respondents versus other sectors. While all sectors identified top-line growth as the biggest potential impact of smart analytics, the BFS response was 18% higher than in other industries. BFS firms have incredibly lofty expectations for smart analytics. They need to temper these expectations with practical execution plans around data quality, data access, provability, and talent to drive scalable success.

Exhibit 1: BFS firms see massive potential in smart analytics

What, in your view, is the biggest potential impact of “smart analytics” over traditional analytics?



Source: HFS Research 2019, BFS N = 34; other sectors = 228

Other sectors include energy, healthcare, insurance, manufacturing, others services, retail and consumer packaged goods, telecommunications, travel, and utilities

Citizens Bank aims for excellence with advanced data and analytics

Citizens Bank is a Providence, RI-based financial institution that offers retail and commercial banking products and services to individuals, small businesses, middle-market companies, large corporations, and institutions. Founded in 1828, it's one of the nation's oldest financial institutions, and it has seen its share of ups and downs. It was an asset of Royal Bank of Scotland (RBS) from 1988 to 2015, where it had a great period of growth and expansion before the global financial crisis. Citizens has been remaking itself since then, with loads of refinement and investment, which yielded a successful IPO in 2014. RBS sold its remaining stake in 2015, and Citizens became an independent public entity. Post-RBS, it has become known for its strong customer-centric culture and financial discipline, which has yielded solid balance sheet performance and industry-leading metrics such as notable return on equity. Its next phase of development focuses on “aiming for excellence” with four key target areas where Citizens is striving to:

1. Be a trusted advisor to its customers;
2. Cultivate strong leaders and best-in-class talent;
3. Build seamless, multi-channel and digitized customer experiences; and
4. Leverage advanced data and analytics to drive insight, advice, and tailored solutions.

Point four, data and analytics, represents the firm's foray into artificial intelligence (AI)-enabled analytics, an exciting but still untrusted discipline. Choosing where to start and how to best develop trusted and proven models will determine just how much excellence Citizens can derive from smart analytics.

Citizens' consumer banking operations move from strategy to execution with smart analytics

In September 2017, Citizens appointed a new COO for Consumer Banking, Julie-Ann Signorille-Browne. Signorille-Browne was very keen to explore machine learning and analytics, but she wanted to start with some practical gains around optimizing operating expenses and removing inefficiencies, which brought Citizens down a path with robotic process automation (RPA). As HFS has previously stated, [RPA is often a gateway technology](#) for enterprises looking for a logical starting point on their automation journeys. The Consumer Banking division delivered some success with RPA in functions such as operations, risk, and finance, and began to look to other areas of their division for next step initiatives potentially involving smart analytics.

Citizens prioritized its collections function as a prime candidate for smart analytics. Collections tends to have a high cost-basis due to its use of call-based outreach with customers to help effectively remediate overdue loans. It is essentially expended cost without a guaranteed return. Citizens' head of Consumer Loan and Specialty Operations, Heather Bentley, looked to existing partners to assess opportunities for a pilot of machine learning-led modeling and segmentation. Existing service provider, Infosys, proposed a pilot using its CollectEdge ML platform to enhance collections segmentation (i.e., whom to target) and contact strategies (i.e., when to target and via what channel). The initial pilot focused on auto and personal loan portfolios.

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Heather Bentley, Head of Consumer Loan and Specialty Operations, Citizens Bank

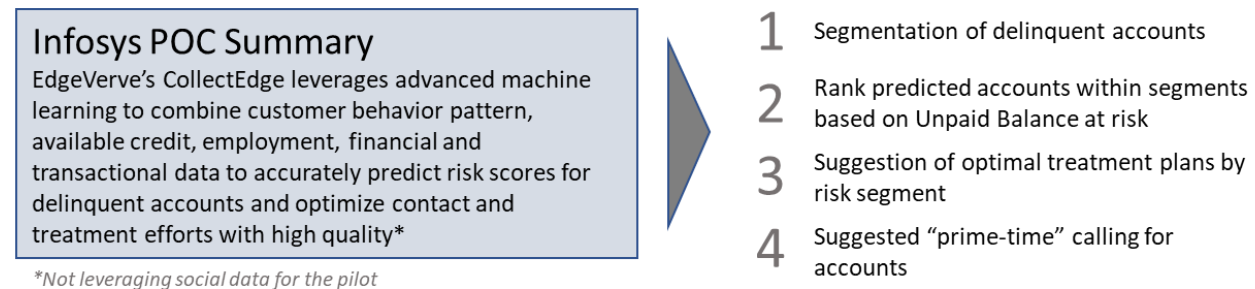
While Citizens states that it picked this area in large part because of its cost-savings potential, Bentley further comments that “It was ultimately the potential for greater customer experience that pushed us over the edge. The ability to quickly and flexibly develop customized models specifically for collections could take us from using models to inform outreach to dictating the best outreach models based on customer archetypes.” Cultivating machine learning models and outcomes within business operations was new ground for Citizens. Success could crack open exciting opportunities for expanded analytics-driven transformation.

Creating value and trust with smart analytics in collections

Bentley's collections group was interested in an efficient way to test and learn with machine learning in collections. Citizens' existing service provider, Infosys, proposed a proof of concept with its subsidiary, EdgeVerve, which had just launched a minimum viable product (MVP) in this space and welcomed the opportunity to work with Citizens on a POC of the loan loss mitigation product that would eventually be called CollectEdge.

Bentley appointed Nate Spiegel, a process improvement specialist, to lead the pilot for Citizens and work with Infosys to drive use case development and set outcome targets. Given internal and external regulatory concerns with AI and machine learning model validation, Spiegel focused on creating a proof of value that was very specific (Exhibit 2). Together, they resisted the lure of using all the data that was available to them, realizing the point was both to prove value and to establish a comfort level.

Exhibit 2: POC scope for Citizens' collections smart analytics initiative



Source: Infosys 2020

The pilot used internal historical data, intentionally excluding data sources such as purchased, licensed, free, public, and social. They trained the ML model using the historical bank data, then compared the results to the most recent data set. CollectEdge's pre-built data model and automated pipeline applied smart search to quickly build the ML models, enabling it to complete the training exercise in a matter of weeks as opposed to months. After training and applying the model, it was reviewed formally through Citizens' risk model validation processes to ensure explainability and compliance. The explainability feature of the model built through CollectEdge helped the teams ensure that the model is robust and compliant with regulatory expectations.

To the earlier point about needing to cultivate a comfort level, of the six months from start to production, Citizens spent four months on validation. Citizens wanted to be supremely confident in the solution with full buy-in that it was explainable. The entire experience was an essay in building trust with machine learning models and systems.

Business-led success with smart analytics in collections

Upon approval of the ML models, Citizens implemented a champion/challenger model and put the CollectEdge solution into production as a "challenger" to its existing waterfall-based segmentation models ("champion"). The CollectEdge solution has been up and running since March 2019. The results to date include:

- Exceeded roll rate lift objective by more than 100%;
- Delivered expense savings with a reduction in staffing as a result of refined delay queuing and contact strategies;
- A credible business-led use case that supports expansion to broader data sets and collections functions; and
- Cultivation of trust and a strong belief in the potential of ML-based models, which are delivering benefits for collections and being evaluated for broader use within Citizens Bank.

For its next steps, Citizens is evaluating an expansion of ML-based models to truly change the face of collections to become much more tailored and personalized to its customers. In addition to evaluating expansion in collections, Citizens is also pursuing enterprise initiatives in advanced analytics. The Consumer Banking team is leveraging its positive results with smart analytics and promoting its learnings and results within the broader enterprise to drive further investment and strategic support of advanced analytics.

Meanwhile, Infosys' EdgeVerve continues on its AI product journey of building AI-enabled industry-specific apps supporting the retail banking value chain, including a recent module focused on lending. These industry-specific apps help support business-led transformation like Citizens' collections initiative.

The Bottom Line: If banks want to achieve their lofty goals with smart analytics, they need to start small and cultivate trust in equal increments with success.

The well-kept secret about AI initiatives is that they have very specific applications and use cases. It's wildly hard to go big fast. For an enterprise like Citizens Bank that has identified advanced use of analytics as critical to its next phase of growth, getting contextual use cases and successes under its belt is essential—all the better if they have active participation, or in this case, leadership from business units motivated to drive technology-enabled digital change. Beyond starting small, driving contextual use cases that solve business problems, and leveraging a trusted partner, the remaining leg of the success stool is building trust. In highly regulated industries such as banking and financial services, internal and external validation of models is critical for future growth.

HFS Research author



Elena Christopher | Senior Vice President Research

Elena Christopher leads HFS' coverage of automation with an emphasis on robotic process automation (RPA) helping to identify and articulate the value proposition for this important change agent. As a complement to her change agent focus, she drives the industry-specific research agenda for HFS, digging into the major trends impacting each in-scope industry. Elena's industry coverage specialty is Banking and Financial Services.

2020 DEFINING BUSINESS OPERATIONS IN THE NEXT DECADE

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HFS influences the strategies of enterprise customers to help them develop OneOffice backbones to be competitive and to partner with capable services providers, technology suppliers, and third-party advisors.

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