

Understanding Regtech

Compliance costs for community banks have skyrocketed in the years following the Dodd Frank Act. In the past two years alone, costs are estimated to have increased by almost \$1 billion, to \$5.4 billion in 2016¹. The median-sized bank in this country has only 44 employees; however, as of August 18, 2017, the total amount of new and proposed regulation stemming from the Dodd Frank Act totaled 26,399 pages. There is simply not enough time for bank staff to read and determine what rules apply; make the necessary changes to policies, procedures, and IT systems, train, and test for compliance—and have the time and resources to meet the needs of their communities.

Regulatory costs for banks largely stem from time consuming manual processes necessary to comply with ever increasing regulation. However, this area is ripe for digital disruption. Regulatory technology, or regtech, refers to the application of technology to ease banks' regulatory compliance burden. Just as fintech is being used to digitize customer-facing financial services, regtech promises to digitize back-office regulatory compliance, simplify regulatory reporting and empower staff to better assess risk and monitor regulatory compliance.

Regtech will not supplant banker decision-making. Instead, it will act like a knowledgeable colleague that can provide insights and make connections a compliance officer might not recognize otherwise. Regtech will empower compliance staff to delegate menial tasks to technology, allowing them to focus their energy on more important risk related issues.

The application of regtech is still in its infancy. Some ideas require the buy-in of regulators and the maturation of technology, while others are as simple as providing better information to compliance officers. However, regtech promises to be just as transformative a tool as consumer-facing fintech solutions.

Regtech Opportunities

A number of technologies are currently driving much of the development taking place in the regtech space – including machine learning, data analytics, automation, biometrics, application program interfaces (APIs) and more. The application of these technologies in the financial services industry has the potential to create new efficiencies and provide significant benefits in regulatory compliance.

1 Federal Reserve System. Conference of State Bank Supervisors. 2017. "Community Banking in the 21st Century." Paper presented at the Fifth Annual Community Banking Research and Policy Conference, St. Louis, MO, Oct 4-5. <https://www.communitybanking.org/~media/f9ac8017119341839056d155dbec82ad.ashx>.

Regulatory Reporting

All financial institutions are required to file periodic financial information with their respective regulators. Community banks primarily fulfill these reporting requirements through the quarterly Call Reports, and bank holding companies of a certain size are additionally required to file a FR Y-9C report. These reports provide information about the overall banking industry and serve as the basis for other reporting requirements.

The most significant burdens of preparing and filing the Call Report are found in the complexity and granularity of the reporting, where many line items require legal or policy interpretations. Regulators have recently taken steps to reduce the burden associated with regulatory reporting; however, changes have been applied unevenly, which has created additional confusion and burden due to a lack of harmony between forms. Banks that file both the FR Y-9C and the standard call report must engage in time-consuming and duplicative efforts to identify the different standards that exist for similar line items on each respective form. These burdens can be reduced through the use of regtech solutions, such as robotics process automation, which can be leveraged to reduce manual reporting burdens. For example, a software solution could tie into a bank's back-end system and prepopulate all of the key reporting fields.

Regulatory Compliance

As regulators issue new rules and proposals, natural language processing can be used to comb through the text to help banks determine which requirements apply to their products and services and identify regulatory gaps and compliance risks. These capabilities can help compliance staff connect regulatory requirements to bank operations, establish controls and help manage those controls through interactive dashboards. Important information can be automatically flagged and sent to the relevant individuals within the organization.

It will be important to closely monitor these solutions, particularly in the early deployment stages, as they may miss important details. However, as these tools are repeatedly used and feedback is provided by compliance staff, machine learning can be leveraged to refine the search process to improve results over time. Regtech will allow banks to more efficiently manage compliance processes and maintain full audit trails on documents for regulators to view. Furthermore, through the use of secure **APIs**, it may be possible for regulators to receive a steady feed of data that would give them an ongoing view into the bank and reduce the frequency of onsite exams.

Modeling and Forecasting

Community banks are generally not required to conduct DFAST or CCAR stress testing; however, regulators still expect these institutions to have the capacity to analyze the potential impact of adverse outcomes on their financial condition and plan for ways to meet their funding needs under stressed conditions. The

Robotics process automation lets organizations automate tasks as if a real person was performing them across applications and systems.

Natural language processing allows systems to understand imprecise or conversational spoken or written language

Machine learning allows systems to learn and improve as new information is made available without specific programming instructions.

APIs allow software components to communicate and exchange information.

ways in which community banks are expected to fulfill these requirements are more discrete and heavily dependent on the bank's business model. For example, banks with significant concentrations in commercial real estate or subprime lending are expected to conduct portfolio stress tests of these exposures as part of their ongoing risk management activities.

Assessing the potential impact of risk scenarios to develop robust forecasting models often requires the consideration of a large number of variables. While banks house a tremendous amount of data, much of this data is unstructured and siloed in different areas of back-end systems. Traditionally, data analysis required a well-organized and structured set of data with which a researcher could test specific hypotheses. However, machine learning allows users to analyze and draw valuable insights from much larger and unstructured sets of data than were previously accessible. This improved analytical capability has the potential to give banks insights that could allow them to develop better credit models and more accurately identify risks.

Identity Validation and Real Time Monitoring

Regtech also holds great potential in identity validation and real-time antifraud monitoring efforts. Today, onboarding and verifying a customer's identity to fulfill Know-your-Customer (KYC) and anti-money laundering (AML) requirements and to reduce fraud is a manual, time-consuming task that relies on physical identification documents such as a driver's license. In some cases it is even illegal to digitize these documents. Finding ways to improve this process will enable banks to more quickly and accurately get to know new customers and manage risks.

Many onboarding and identity validation processes can be automated, such as cross-referencing customer information against global databases to verify identity and analyzing identification documents to ensure they are genuine. Dashboard reports of findings can enable bank staff to more efficiently review and identify individuals that need more robust verification. Some firms are exploring how **blockchain** could be applied to create transferrable digital identities that could give consumers more control over who has access to their personal information and how that information is accessed. Moreover, economies of scale could be achieved through cooperation in the financial services industry. For instance, a bank could leverage the due diligence completed by another financial institution to confirm the identity of a mutual customer.

Biometric authentication systems -- such as facial recognition software that allow banks to compare the image on an ID to a selfie -- can also do much to lower fraud. In fact, **ABA and Accenture** estimate that biometric authentication can drive bottom line value of \$700 million for the banking industry by 2020 through a reduction in instances of fraud.² While criminals may be able to steal or guess customer passwords, it is much more difficult to replicate or leverage biometric records. For example, voice recognition is an effective way of reducing fraud conducted over the phone. One major financial institution that implemented voice recognition saw a 59% decrease in account takeovers and over \$1 million in prevented fraud loss.³

Blockchain is a distributed ledger technology that can be used to create an immutable trusted record. Some believe it can be used to more securely control identity information.

Biometrics validate identification by measuring some intrinsic characteristic of the user, such as a fingerprint or retinal scan.

2 American Bankers Association. Accenture. 2016. "Fintech Playbook."

<https://www.aba.com/Tools/Function/Technology/Mem/Documents/Fintech-Playbook.pdf>.

3 Beranek, Brett. "Security breach risks reduced with voice biometrics." Whatsnext.Nuance.com. Posted June 9, 2015. <http://whatsnext.nuance.com/customer-experience/leveraging-voice-biometrics-for-fraud-prevention/>.

In addition to KYC, banks are expected to monitor and report transactions that may be related to money laundering or terrorist financing activities. Traditional fraud monitoring systems rely on specific non-personal rules (like geography) to detect fraudulent transactions. Machine learning and data analytics could be applied to sift through large sets of unstructured data to analyze the transactions of each customer, flagging anomalous transactions that are inconsistent with the customer's ordinary behavior.

A regtech solution available in the market today is **Rippleshot**, an ABA endorsed fraud analytics solution provider. Rippleshot provides an automated card compromise detection platform. The tool, Rippleshot Sonar, uses machine learning and data analytics to identify fraud more quickly and efficiently. Reviewing millions of transactions, Rippleshot Sonar can pinpoint when and where a breach occurred, automatically identifies which cards are compromised, and accurately predicts which ones will go fraudulent in the next 90 days.

Risk Management

Regtech can also provide compliance officers with a more holistic view of risk across the organization. Instead of remembering or manually looking up each relevant regulation, a machine learning algorithm can scan bank policies and procedures, disclosures and other documents, highlighting where regulation or guidance is likely to apply. The banker can then review those recommendations and, much more quickly than before, incorporate them into the compliance management program.

Today, compliance management systems are often based – conceptually – on a stack, with every new regulation layering on yet another obligation or control onto a product in order to ensure that no obligation goes unmet. Layering is an inefficient way of managing compliance risk because it introduces unnecessary duplication. A cognitive computing system can instead envision networks of intersecting requirements, ensuring the same comprehensiveness without duplication by focusing on the issues that most warrant attention.

Regtech can also be applied to monitor employees and internal risk. Artificially intelligent software solutions can provide a voice review of calls for insider risk management and internal reviews, and it can tie in transaction data. It can replace much of the time-intensive manual review, freeing up compliance officers' time for higher-level reviews and strategic priorities.

Predict360 Compliance Management Solution, offered by 360factors, is another example of an ABA endorsed regtech solution available today. **Predict360** is a software solution for managing governance, risk and compliance across an organization through a single platform. Predict360 includes a regulatory change management module that tracks changing regulatory requirements and updates compliance-related activities accordingly; a risk management module that identifies and monitors risk; an audit management module that manages the complete audit lifecycle; a policy and procedure management module that maps documents such as policies and procedures to appropriate regulations and controls; and a compliance management module that collects and tracks all compliance related activities and regulatory reporting requirements.

Risks and Barriers to Deployment

While regtech has the potential to create transformational change in back office processes, there are still many barriers to adoption. Community banks may need the coordination of their core processors to integrate regtech solutions into their systems. While various technologies promise to reduce manual tasks and provide new efficiencies, these technologies are still evolving and unforeseen risks may exist. Finally, regardless of the potential benefits, regulators will need to be convinced of the merit and security of regtech solutions if banks hope to incorporate them into their technology stack.

Systems Integration

Many community banks outsource their core processing to a third party technology vendor. Success in leveraging regtech will largely depend on the ability to integrate with a bank's core processing system. Consequently, banks may require the coordination of their core to use regtech solutions. Systems integrations are a complex and often expensive task.

Complicating matters further, many of the solutions being developed by regtech startups directly compete with products and services offered by core processors. This may incentivize core providers to increase integration fees for third party solutions. Banks should engage in discussions with their core processors to understand what options are available for leveraging regtech solutions.

Maturation of Technology

A number of exciting new technologies promise to revolutionize compliance management in the banking sector. However, many of the technologies underpinning regtech solutions – such as machine learning, blockchain and biometrics – are still in the early stages of development. Unidentified risks may exist with the use of these technologies in the production environment.

For example, improper vetting of machine learning algorithms may lead to the codification of implicit biases that create blind spots in compliance management or introduce unintended discrimination. It will be important for banks to put in place proper controls to manage these risks. Regtech is not a replacement for employees, who will continue to play a critical role in risk management and regulatory compliance.

Furthermore, it is unclear who the winners and losers will be in the nascent regtech industry, which may face heavy consolidation over the next few years. Banks may face continuity-of-service risks related to the use of products developed by regtech startups. It will be important for banks to conduct robust vendor risk management if they consider partnering with third party regtech providers.

Regulator Buy-In

Community banks that determine how to work with or around their core processor to incorporate regtech solutions will also need to contend with regulators. While regulators are unlikely to ban regtech, they may focus more scrutiny on banks that leverage these solutions. For example, banks that use machine learning to automate KYC and AML tasks may need to demonstrate that sufficient controls are in place to provide oversight over decision-making processes. Financial institutions that consider the merits of pooling resources to better tackle compliance – such as launching a

shared database for KYC and AML purposes – may need confirmation from regulators that they are not violating anti-trust laws. Additionally, as with all vendor relationships, banks will need to explain how they control for risk related to the use of third party regtech services.

There are also barriers related to the application of certain technologies that may hamper regtech adoption. As discussed earlier, in some cases it is illegal to digitize identification documents. In the past, this rule made sense as a way to reduce ID forgery. However, today, it is limiting the ability of banks to use photos of IDs to verify the identity of customers. The onus is on lawmakers and regulators to determine how rules can be updated to reflect the current technological environment. However, banks can engage in discussions with regulators to help them understand which rules hamper the industry’s ability to provide more secure services.

Take-away for Banks

Regtech has the potential to revolutionize back-office compliance to reduce costs and improve regulatory outcomes. While regtech is an excellent tool in the toolbox, it is no replacement for experienced staff. Instead, regtech is like a knowledgeable colleague that can enable a compliance officer to focus on high-level reviews and strategic priorities. Community banks may need to coordinate with their core technology provider to effectively leverage regtech solutions. As the technology underpinning these solutions is still evolving, banks will need to monitor and identify weaknesses or potential points of failure in the regtech solutions they use. Education among regulators and the industry will be critical to enabling the full potential of regtech.

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