



# COMPLIANCE SCIENCE

APPROACHING COMPLIANCE WITH  
A STARTUP MENTALITY

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**B**anks' compliance functions are striving for "Goal Zero." Their aim is to achieve zero regulatory breaches, thus avoiding subsequent reputational and financial damage. Realizing this goal, however, won't be easy. Compliance functions must contend with waves of new regulation and with increasingly sophisticated techniques being deployed by those actors intent on breaking the rules. And they must do so under tight budgetary constraints.

But help is on the way. New data science techniques are able to improve the ability of banks to identify breaches, while reducing the "manual" work required. Banks that have already invested in such technology can achieve further gains in efficiency and effectiveness by optimizing these tools based on their ongoing experience of breaches and by analyzing the outcomes of recent file reviews.

## OLD SCHOOL

A stylized summary of a typical compliance process is displayed in Exhibit 1. Banks usually start by defining a "scenario" in which a particular type of breach might occur. They then define a set of "triggers" which, if detected, generate an "alert" indicating an increased threat of a compliance breach. These alerts might be triggered by the contents of certain emails, patterns of behavior on instant messaging, or perhaps a large payment to a suspicious location. Once the alert has been activated, a compliance officer will open a new case file, and this is the point when a large amount of manual effort takes place. The compliance officer will then manually gather supplementary information to get a more complete picture of the situation. After analyzing this information, the compliance officer will conclude whether it is a real breach or just a "false positive."

# 30%

How much a bank reduced its false positives using compliance science

The problem with this process is that it is a static and inefficient approach. Given that most of the alerts turn out to be false positives, there is a feeling that much of the manual effort involved was not really necessary, and this has proven to be demotivating for compliance staff.

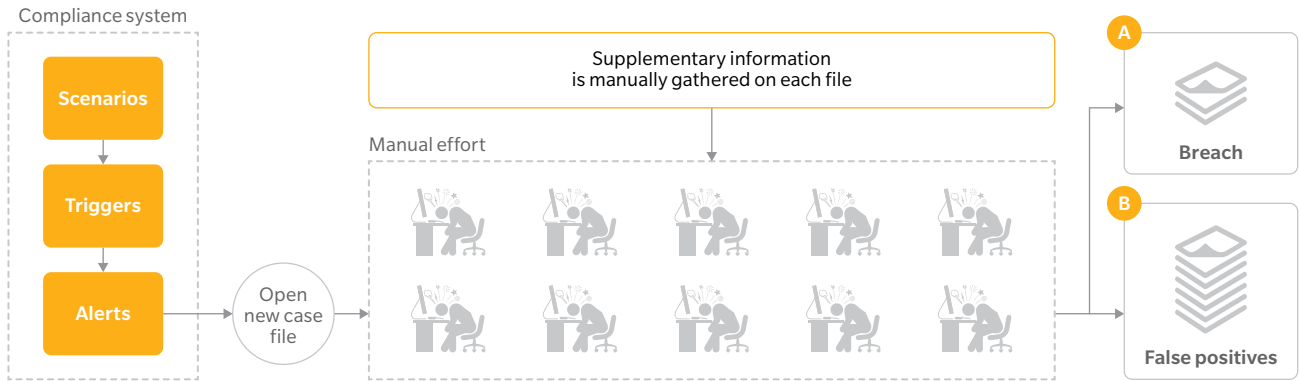
## NEW SCHOOL

More sophisticated banks have embarked on a new approach that incorporates the latest data science techniques into their compliance processes. A new type of expert resource, the "data scientist," is able to use the experience from previous file reviews to offer live feedback to the compliance system. The typical enhancements that the data scientist is able to introduce into the process include introducing new triggers and recalibrating old ones to reduce the number of false positives; expanding the amount of information that is auto-fed into the system to enhance the accuracy and granularity of a trigger definition; and refining scenario definitions to reflect the true nature of actual historical breaches.

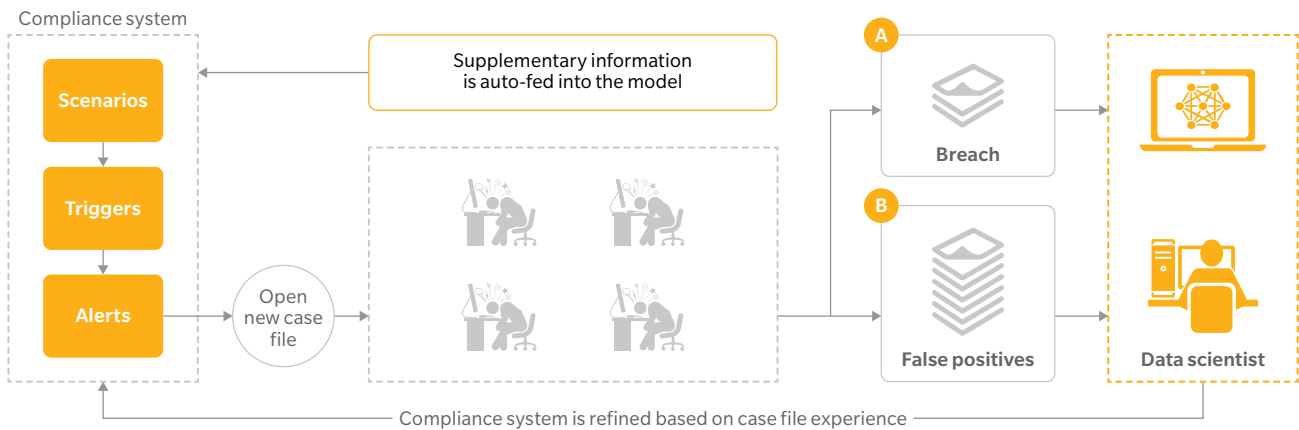
Improvements come gradually as the "machine" continues to learn from more and more experience. But this approach has enabled some banks to reduce the number

EXHIBIT 1: BANK COMPLIANCE PROCESS WITH AND WITHOUT DATA SCIENCE

LABOR-INTENSIVE COMPLIANCE PROCESS TYPICAL OF MOST BANKS



COMPLIANCE PROCESS USING NEW DATA SCIENCE TECHNIQUES



Source: Oliver Wyman analysis

of compliance officers they need over time, leading to major cost savings, while simultaneously improving performance.

Banks that have invested to optimize their compliance processes with improvements in data, analytics, and technology have seen significant progress in effectiveness and efficiency. One large bank observed a considerable increase in the quality of their transaction monitoring alerts, improving the alert-to-suspicious-activity report ratio from 7 percent to 25 percent, while also reducing false positives generated by more than 30 percent.

By breaking the process down into discreet pieces, banks gain the confidence that certain lower-valued elements of the process can be outsourced to lower-cost locations. Pure outsourcing of an entire compliance process, on the other hand, has turned out to be too blunt an instrument that either leads to a reduction in effectiveness or increased cost elsewhere in the department.

The latest data visualization techniques can also help to reveal insights and relationships in the data that might not otherwise be apparent. For example, when investigating the Panama Papers, banks that could readily visualize the web of connections between offshore companies, intermediaries, and shareholders were quickly

able to identify compliance threats. New automation techniques can also be applied to streamline other work-intensive areas, such as management reporting and regulatory reporting.

## EMULATING DIGITAL STARTUPS

Achieving such advances in “compliance science” requires the development of capabilities in data mining, analysis, and visualization that are at present uncommon in compliance functions. To develop them, a radical departure from current approaches will be necessary. Compliance functions will need to create an environment and culture that encourages innovation and that can adapt quickly to new developments.

This is most likely to be achieved by emulating the environment of a tech or digital startup. This new team need only consist of a small team of data scientists and creative thinkers, but it is important that they are free to innovate and aren’t held back by corporate bureaucracy and systems limitation.

In our view, building an effective compliance science capability requires four important steps. First, banks must hire a new profile of employee with programming, data analytics, and machine-learning experience. They should be placed in a separate team within the compliance function and given access to the experienced compliance officers who can provide expert guidance.

Next, banks must allow the team to experiment with tactical technology, which can be set up in an agile way independent of the typically slower time frames of large IT programs.

Then, they should ensure that data scientists have access to the data and tools required to develop prototypes. Given the scope of compliance issues and the techniques involved, this means almost unrestricted access to counterparty, transaction, and communications data and also experimentation with new data science libraries, such as those found in the Python toolkit.

Finally, banks must give the new team a mandate to focus on self-defined compliance enhancement projects and not burden it with business-as-usual work. They must create an environment of autonomy and freethinking where anything is possible, and not try to direct progress, but check in regularly.

## DIGITAL SHIFT

A digital shift is occurring across financial services, and compliance functions cannot afford to be left behind. They need to make their move now by hiring two or three data scientists and creating the sandbox environment described above. This “startup” can use historical data, expert knowledge, and new data science techniques to develop tools that will make compliance processes more effective and cost-efficient. Compliance is now a material operating cost for financial firms, and failures can result in significant reputational damage and financial cost. Institutions that fail to bring the new culture of digital innovation to bear on compliance will find themselves at a serious disadvantage to their more advanced competitors.

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