

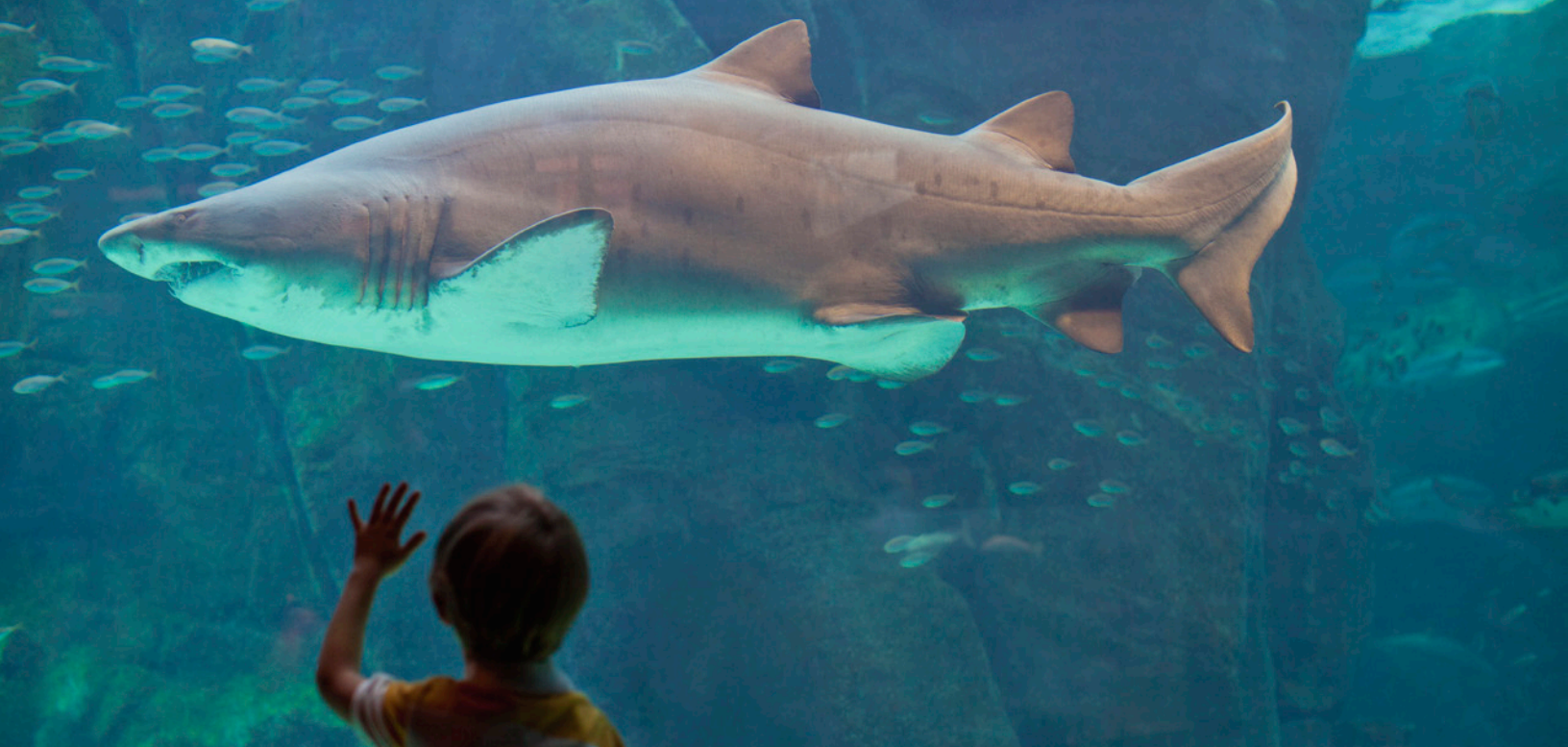


# epio depth

The Benefits of Advanced  
Analytics for Financial  
Institutions:  
A Breakthrough for  
Efficiency  
and Compliance

People. Partnership. Performance.





## Executive Summary

Many attorneys are under the impression that keyword searches are the core of discovery. Their assumption is that the natural (and perhaps only) method for locating documents is to run a simple language search through a large set of potentially relevant documents. This search would be followed by a considerable number of document review attorneys narrowing down the relevant documents by reading through them, one by one.

There is, however, an alternative that provides results with far greater accuracy and efficiency. Advanced analytics is a process in which computers identify patterns and behaviors within a collection of documents. It allows for documents to be searched at extremely high speeds for patterns that would not be recognizable to the human eye. Its capabilities are especially useful to the financial sector, where enormous amounts of data must be stored, analyzed, and subjected to stringent compliance requirements.

## The Potential to Revolutionize Financial Data Analysis

Financial firms across the U.S. are struggling to adhere to federal regulations while maintaining their competitive edge. The regulatory framework surrounding financial transactions has grown considerably more complex, particularly with regard to data privacy. Managers are faced with the possibility that a single employee's failure to comply could pose a threat to their entire firm.

Advanced analytics offers a method for firms to uphold their security standards without micromanaging their employees' work. When an employee violates a financial institution's policies by cutting regulatory corners, advanced analytics software can identify the change in that employee's output patterns. This can be done with routine analytic monitoring.

"Advanced analytics identify patterns," said Jennifer Beilstein, a solutions architect for Epiq, a leading global provider of integrated technology and services for the legal profession. "They detect different types of activities and behaviors that are happening, and those different activities and behaviors are what could potentially throw up a red flag. The analytic tools have been looking across the data, and they can identify these patterns and

activities, look at the sentiments, and identify something that could potentially put the company into noncompliance—or could be a red flag for a regulator.”

For example, if an employee is engaging in insider trading, advanced analytics can detect patterns in his or her communications that would suggest that illegal activity is taking place. The language used when information is traded is not easily understood by those without expertise in the field, and a human reviewer would be unlikely to notice anything unusual about communications referencing an illegal trade. However, a computer can recognize deviations from typical patterns, pick up on codes used to disguise particular phrases or concepts, and flag these communications for further review.

Advanced analytics also allows companies to keep track of data from new sources. Firms are required to account for data from sources that may not have existed just 10 years ago. Maintaining data from new types of media (such as the Internet of Things, instant messaging services, social media sites, chat platforms, and various types of mobile phone communications) is a considerable burden, particularly when it must be searched.

Identifying relevant data from these new sources using keyword searches would be time-consuming and expensive. In many cases, it would not even be possible. But advanced analytics uses machine learning and artificial intelligence to conduct quick searches of highly technical data that would be incomprehensible to human reviewers.

One of the most pressing problems that firms face when compiling data is managing information from legacy (that is, defunct) systems. A great deal of useful data is often ignored because eDiscovery teams are unsure of how to access it, or how to search it. Computer systems that review data are likely more able to interpret such data.

“In eDiscovery, there’s always an old server sitting off to the side somewhere,” said Beilstein. “A lot of financial institutions have to maintain these legacy systems, such as old email platforms, and they can’t just get rid of them. Advanced analytics can help them tie their legacy systems into their newer technologies—to take the newer technology, leverage the legacy data, and incorporate newer technology on top of it.”

## The Advantages of Advanced Analytics

These advanced analytics offers a wide array of benefits to firms, especially when compared to traditional keyword searches. In many cases, the use of advanced analytics can prevent the need for litigation altogether.

According to Beilstein, the benefits of advance analytics include:

**Increased value:** The cost of hiring a team of document review attorneys to review large quantities of electronic data has made litigation prohibitively expensive for many firms. Advanced analytics gives them a more efficient option.

**Reduced review speeds:** Computers can search documents far faster than a human. They also make far fewer mistakes.

**Better informed decisions:** Advanced analytics allows managers to make choices after receiving a full overview of relevant data. Review conducted by humans will inevitably be incomplete due to human error.

**Identify patterns and trends:** When a team of human reviewers reads over a multitude of documents, each individual will have seen only a small percentage of the relevant data. When a computer reviews them, it will have the ability to pick up patterns that exist across the entire data pool.

**Useful applications for fraud and risk sectors:** Advanced analytics is not just a tool for litigation. It allows companies to detect security breaches, and other forms of illegal activity, as soon as they happen.

“Advanced analytics can be used on the front end just for compliance purposes, and to determine risk, before eDiscovery even comes into play,” Beilstein said. “A tool like Valora PowerHouse (a provider of auto classification, data analytics and machine learning technologies) makes it possible to go in and look at your email server and across your network, pull information from those places, and analyze it to determine if there’s any area where you’re not being compliant.”

**Natural Language Processing (NLP):** In the past, the use of slang and abbreviations in documents created great difficulties for computer-assisted

review systems when interpreting data. However, NLP allows a computer to understand the complexities of human speech, and examine speech patterns to detect unusual activity.

“There are tools, such as Bloomberg Chat, that banks, investment firms and brokerage firms are using to communicate,” said Beilstein. “In those communication tools, especially chat and messaging applications, people are talking informally. The language used in chat programs may be very casual, or it may be shared in bullet form. Advanced analytics can isolate documents that the compliance team needs to take a look at. Based on the information contained in the communication, the tools can red-flag a conversation as something potentially harmful.”

## Advanced Analytics in Action

To give an example of how advanced analytics can identify illicit activities that would go unnoticed by typical review methods, let’s suppose that a financial institution employee named Carl is improperly sharing high-security data with another employee, Diane, via email. If Carl and Diane are masking their activities by avoiding the use of the words like “illegal” and “breach” in their email communications, a traditional keyword search would not produce any relevant results that would expose their actions.

However, if the institution’s compliance department uses an advanced analytics tool called Brainspace to search all of the emails from within their department, they will be able to look at a visual representation of all of the data found within the emails. This data would include graphs showing the most commonly used terms, senders, and recipients. This display of advanced analytics data could show that Carl and Diane greatly increased their email communications at a particular point in time, and that their emails contained unusual numbers of references to the type of information being shared.

Other advanced analytics tools, such as NexLP and Story Engine, could be used to produce a visual display of all of Carl’s email communications, to show the identities of his most common recipients. A glance at this display would show that Carl also

sent an unusually high number of emails to an employee named James, and that James sent an unusually high number of emails to an employee named Chris. These tools can be used to determine whether these emails contained positive or negative sentiments, how many emails yielded replies, and which topics were most commonly discussed. Without the use of advanced analytics, this information could be obtained only by conducting a prohibitively expensive investigation.

“Advanced analytics has become more mainstream in business applications as big data solutions have become more mainstream within corporations,” Beilstein said. “Financial service firms are becoming smarter and more well versed on the power of analytics to drive better decisions, reduce costs, increase value, and make better, more strategic decisions across data sets.”

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