WHAT THE MADOFF INVESTIGATION OF STRUCTURED DATA COULD MEAN FOR CORPORATIONS

From "The (Im)perfect Crime"

For years, clues that something didn't add up in Madoff's work were hidden in plain sight. Consider a few of them.

The Server

The firm's fundamental, legitimate business—buying and selling securities for big brokerage firms—was built on technological prowess. But in recent years, traders had begun grousing about the firm's proprietary MISS software and the decades-old mainframe it ran on. Replacing the mainframe would entail replacing a venerable IBM server, the AS/400, which served as the investment business's main computer backbone.

"Managing the AS/400 was getting to be a very, very hands-on, manual process," recalls Bob McMahon, who was brought in to rationalize the company's systems from 2007-2008. However, "Bernie never wanted to get rid of this AS/400 system."

It is easy to see why: the machine, which has been autopsied by the government, was the nerve center of the fraud. Thousands of pages of statements printed out from it showed trades that were never made.

The Emails

Around 2002, Madoff proposed eliminating email throughout his firm but was persuaded not to. Lots of Wall Street firms were talking about restricting it in the wake of a series of corporate scandals, but Madoff ultimately did the opposite of what you'd expect. He allowed emails for staffers at his trading business—the one the SEC regulated—while abolishing it for the people working in the unregulated investment business.

Madoff took another step: he ordered that old emails be transferred to microfiche, a cumbersome process that costs much more than archiving records digitally. Why? Perhaps it had to do with the fact that microfiche is much more difficult to search than electronic records.

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The painstaking process of unraveling the Madoff Ponzi scheme is underway. The famed AS/400 IBM server, microfiche emails, and other electronic documents are star witnesses for investigators. The story that the data tells, once it is pieced together, will impact the livelihood of thousands of investors and influence the thousands of lawsuits already filed.

"The Madoff matter is the mother of all fraud," says Erik Post, senior managing director in FTI Consulting's Technology Practice. While the media continues to explore Madoff's web of betrayal from New York to Palm Beach to Paris, Post and his team of professionals, skilled in accounting, technology and forensics, are tasked with the brass tacks of the investigation. They have been contracted by the trustees in the Madoff matter to dig for records that help paint a picture of what actually occurred and who was affected. According to Post, his team is "collecting and analyzing investment and personal information to determine what happened, whether anyone helped Madoff, how much money did the 7,000 plus investors put in and withdraw from Madoff funds over the course of its 30-plus year history, and how much money is left."

But, how do investigators piece together the data to make sense of the millions of fraudulent statements, trading orders and money transfers that enabled Madoff to continue his Ponzi scheme for so long? Why is this same process, the electronic discovery of structured data, growing increasingly common for Fortune 500 companies involved in any sort of litigation, regulation or investigation?

The Birth of an Industry

To understand the tools and techniques behind the Madoff investigation, it is important to grasp the process commonly referred to as electronic discovery or e-discovery, which has grabbed almost as many headlines as the Ponzi scheme.

High-profile cases have brought to light the challenge that corporations have in following the e-discovery process of managing, collecting, reviewing and producing electronic data for litigation, investigations and regulatory compliance. In some matters, companies knowingly were hiding data and failed to produce the requested information to opposing counselors and regulators. In other matters, corporations were relying on a strategy of overwhelming the other side with so much of their corporate data, relevant or irrelevant, in the hopes of intimidating the other side into settling or dropping the case. Even while most corporations were acting in good faith, many corporate legal and IT departments were overwhelmed with their own perfect storm—dramatically growing amounts of electronic corporate data due to new technologies, hundreds of legal and regulatory matters to manage each year, and increasingly short timeframes to find and produce that data.

E-discovery became such an issue that amendments to the Federal Rules of Civil Procedure were enacted in December 2006 to provide greater guidance for the speedy recovery of electronic data. In addition to providing new e-discovery requirements, these amendment changes helped boost a relatively new e-discovery industry. Hundreds of legal technology vendors and consultancies flooded the marketplace, scrambling to help in-house and outside counsel with a very complex process. For large, multinational corporations, correctly and defensibly following the entire e-discovery process—including the identification, preservation, collection, processing, review and production of responsive data—was an incredibly time-consuming and expensive project. Then, multiply this process by the number of legal or regulatory matters the average Fortune 500 company was involved in at any one time—with estimates ranging from 300 to

Rob Brunner and Erik Post

500—and this process becomes an extremely expensive proposition In fact, according to an influential industry report, the annual 2008 Socha-Gelbmann eDiscovery Survey, commercial expenditures on e-discovery in 2007 surpassed $2.7 billion.

Many of these vendors and software tools offered very innovative and new ways to quickly collect and analyze massive amounts of a relatively new kind of corporate data—emails and other electronic documents. Over the past twenty years, the computer and Internet revolution dramatically changed business processes as well as increased the amount of electronic data that companies would create and keep. Previously, legal teams may have relied on oral testimony to reconstruct conversations or activities. Thanks to the ubiquity of email, cases were increasingly settled to the discovery of highly publicized "smoking gun" emails.

The Elephant in the Room

Amid all the commotion surrounding the discovery of e-mails and electronic files, many vendors and attorneys were overlooking the most critical resources for corporate information—what is known as structured data.

"Every Fortune 500 corporation has structured data in their corpus of electronically stored information (ESI)," says Robert Brunner, senior managing director at FTI Consulting, who along with Erik Post, is responsible for the Financial and Enterprise Data Analytics (FEDA) practice, dedicated to the discovery

and analysis of structured data. "It is the core engine that drives their sales, their general ledgers and their revenue recognition."

Companies such as IBM, SAP, Oracle and Microsoft owe a large part of their success to the wide adoption of their databases and applications. There are also hundreds of other vendors that provide more customized applications tailored to specific vertical industries. And, in many cases, corporations have developed their own proprietary applications to meet their particular needs. In short, there are so many different types and varieties of these applications that no two companies are likely to have the exact same, or even similar, technology on the backend.

However, no matter who makes the tool, the data within these applications is stored and organized in a structured manner, such as a field for an employee's social security number, and this helps to make the data access more efficient, hence the term structured data. (Similarly, emails and other "loose documents" such as Microsoft Word files are termed "unstructured data" because they are not organized in the same manner.)

Every Fortune 500 company has dozens, if not hundreds, of these database applications spread throughout their organization and they interact with, and create and collect data on work product, employees and customers alike. Consider a bank that offers an online system for customers to check their balances, a manufacturer that tracks the shipment of inventory from factory to warehouse to retail store, or a software company that uses a portal for employee benefits.

The advent of these databases has enabled the automation and increased convenience of many tasks, but has also electronically tracked all of these movements in one or multiple applications, creating an ever-growing amount of data.

Until recently, the majority of this information remained in databases and was not used in any sort of investigation or litigation. This was due to several factors, including the newness of many of these tools, the complexity and cost associated with

Market Drivers of Demand for Structured Data Analysis

Business Issues
Bigger Deals
Larger Discounts
More Complex Business Relationships

Technical Issues
Exploding Transaction Volumes
Complexity of Enterprise Systems
Un-Integrated Systems

Greater need to discover and leverage structured data to resolve critical business issues

Risk Issues
Increased Financial Exposure
Risk of Findings of Spoliation
Sanctions/Adverse Inference
Visibility of e-Discovery Failures

Regulatory Issues
Increased Regulatory Action (SEC DOJ, etc.)
Federal Rules of Civil Procedure
Sarbanese-Oxley Control Reqs.

collecting information from these applications, and, in many instances, a common aversion that many lawyers have for technology. Opposing counsel might make a motion to request salary information for all female U.S. employees in a class-action sexual harassment case, but it was possible for corporations to argue that collecting that information was too expensive or not a "reasonable" request if the cost of collecting the information was out of proportion to the size of the suit. There was often a tacit agreement not to request this information due to the complexity and cost involved with the process.

With the amended Federal Rules, all of this has changed. The Federal Rules do not differentiate

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between structured and unstructured data. They merely state that all ESI is discoverable, which encompasses both structured and unstructured data types. Savvy plaintiffs' attorneys are beginning to request this kind of data from opposing counsel. These requests have been upheld in court, despite producing parties' objection, thus helping to create a small but growing body of case law. So, although still on the fringes of most professionals' e-discovery radars, structured data is quickly becoming a hot-button issue in litigation as well as regulatory and internal investigations.

"The complexity and variety of these structured data applications creates a significant challenge for finding and collecting data across the enterprise," Brunner says. "There isn't an easy, highly repeatable software tool to solve this problem."

Piecing Together the Data

Of course, finding and collecting the data across many applications is often just the beginning. Like with e-discovery for unstructured data, making sense of the data is often the main challenge.

"Interviews, depositions, contracts and other types of evidence may reveal the who, what, when and why questions of any matter, but structured data is often where the question of 'how' is answered," says Post, reflecting on his experiences.

Because of the complex requirements for collecting and making sense of structured data for legal and regulatory matters, including an adherence to defensible processes that will stand up in court and sophisticated IT skills, corporations and government agencies turn to a very small group of expert consultants that can help piece together the structured data.

One such group is the Financial and Enterprise Data Analytics (FEDA) practice within FTI Consulting. Led by industry leaders Rob Brunner and Erik Post, the seeds for FEDA were planted more than a decade ago, well before the word e-discovery became part of everyday legal lexicon.

Both Brunner and Post were blazing new ground in what was then called complex data analysis. For instance, Brunner worked on the infamous Orange County, Calif. bankruptcy, the largest municipal bankruptcy in U.S. history at the time. His team had to collect all the investment data and general ledger information involved in the county's collapse and analyze this data to determine why and how the county treasurer's investments drove the municipality into bankruptcy.

"Very early on, there were several pieces of big litigation where all of the answers were in these big databases," Brunner says. "It was evident that this was relatively new ground and there were very few of us who had the skill sets to get the data out and do the analysis."

Meanwhile, Post was busy building technology centers to support litigation support practices. Upon Microsoft's release of Access, Post began to realize the ability for users to manage data and glean important business intelligence in a completely new way. He began work in the insurance practice and used Access to manage insurance claims and conduct insurance modeling. For this kind of work, Post would have to capture volumes of structured data and analyze it to support the claim.

"At the time I wasn't thinking of it as structured data management, but what I was doing then was exactly what we do today when we use SQL or Oracle tools to help us manage our projects and the analysis we need to do," Post says.

Over the years their experiences reinforced the growing importance of structured data and the lack of experts that could bring the legal, business and IT acumen to the task of managing and analyzing structured data.

Post, for example, worked on the restructuring of a major retailer. "I managed the entire spectrum of bankruptcy claims, which required the management of all kinds of data, from accounts payable to accounts receivable to human resources. We then used the data to build large models to support the way in which we were going to turn around that business."

Forging New Ground

Soon, Post and Brunner's expertise was needed on large class action lawsuits, corporate restructurings, as well as internal and regulatory investigations. And, as the interest in e-discovery grew, the FEDA group began to grow in order to meet increasing demand.

"Attorneys don't necessarily understand databases, and the concepts and processes can be quite intimidating to non-IT personnel," Brunner says. "However, attorneys do understand e-discovery and how it involves e-mail and electronic files. We've spent a lot of time educating clients about the importance of structured data and how clients' obligations regarding e-mails also apply to things like Oracle general ledger data. As a result, we're starting to see a lot more attention paid to structured data earlier in the e-discovery process."

A number of recent investigations have helped to highlight the importance of structured data. Besides the Bernie Madoff case, in which thousands upon thousands of pieces of structured data are being collected and reviewed, the recent economic downturn is driving further growth in this area. Amid the failure of long-standing financial institutions such as Lehman Brothers and Bear Stearns, as well as the influx of other companies filing for bankruptcy and looking to restructure, structured data professionals are being called in to identify and preserve information pertaining to these companies' assets.

Ongoing litigation and investigations from subprime loans are also now relying on the use of structured data analytics, according to Brunner and Post. And, as hedge funds begin to dip their toes into these investment waters, there's a need to use analytics for greater clarity into the attributes of individual loans and securitized pools of subprime mortgages in order to identify and measure the risk embedded in the loans.

But it's not only high-profile matters relating to fraud or subprime mortgages that are driving growth within this industry. In recent years, the volume of structured ESI within companies is growing exponentially. In addition, these companies' IT infrastructures are becoming much more complex, necessitating the use of complex data analysts.

For example, FEDA recently completed a project for a major credit card company, which was involved in a large class action lawsuit. Because the case encompassed a window of nearly a decade, the company had to analyze billons of airline transactions that had been charged to its cards.

According to Brunner, there has been a dramatic decrease in the cost of storing and processing data, which has contributed to companies creating, and keeping, vast amounts of data. "So more companies are saving more information than ever before, which means that when they have to make disclosures in lawsuits, they can't make the argument that this information is inaccessible."

To meet the challenges of these matters, and to produce results in a timely and cost-effective manner, the FEDA practice has developed a number of processes, software tools and dashboards. Unstructured data discoveries follow a fairly set workflow known as the Electronic Discovery Reference Model (EDRM). This model maps out the various steps involved in the vast majority of e-discovery requests involving unstructured data. These steps include identification, preservation, collection, processing, review and production. Because FTI is pioneering this field of structured data discoveries, the team had to come up with their own model.

"There is a methodology we've developed over time that almost follows the EDRM, but it is slightly modified," Brunner says. "That's because there are things you have to do with structured data that you don't have to do with unstructured data. For instance, with emails there are steps within EDRM to collect and process data so it's ready to review. For structured data, the scenario is more along the lines of extracting the data and transforming it into a reviewable format."

Specially designed statistical dashboards have also helped FEDA and clients manage the process. These dashboards can output visual representations of different elements of a matter, including workflow progress, to assist with litigation support. "We have one case right now where we have 300 different locations we need to visit and do inventory," Post says. "With this dashboard, we can monitor the progress by using a map of the U.S. and overlaying dots that represent different cities and the percentage of work completed."

The Road Ahead

Corporate legal and IT teams can expect to hear more very soon about the importance of structured data

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Electronic Discovery Reference Model
www.edrm.net

VOLUME

RELEVANCE
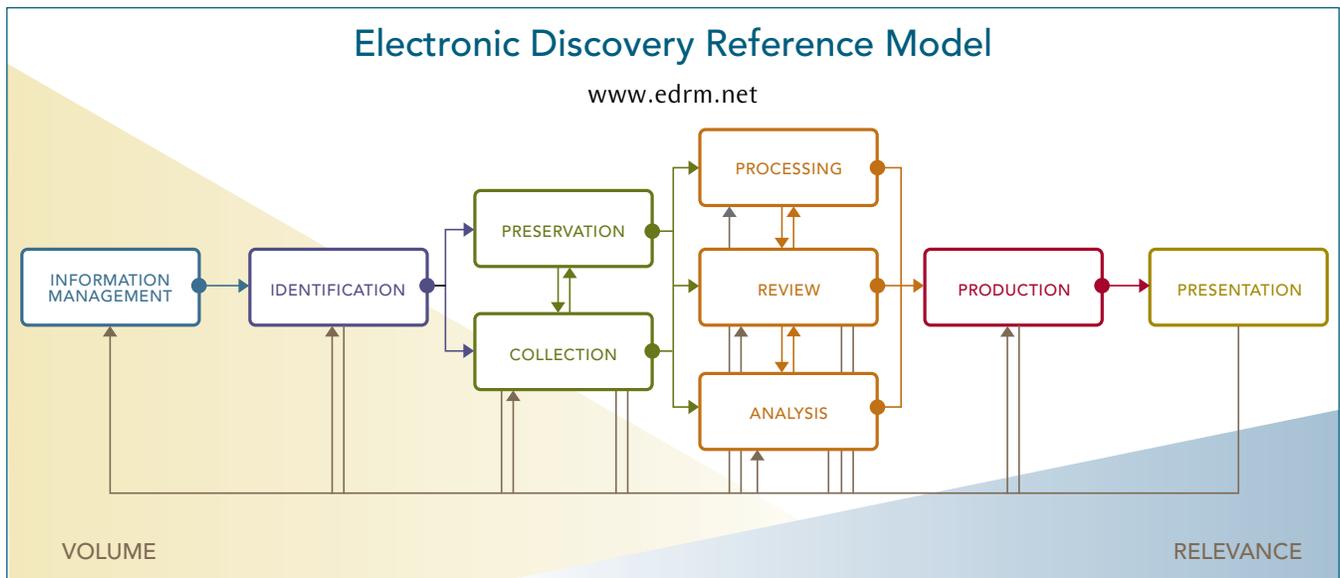
in e-discovery. Indeed, FTI has seen its structured data caseload increase dramatically to nearly 40 matters in 2008. It is important to note that these matters have spanned a spectrum of industries, including pharmaceuticals, retail, financial services and telecommunications. The types of matters covered a broad range as well, from product liability to employment class actions to government investigations.

Not only is the number of matters increasing in the U.S., but FTI has navigated the complex litigation and regulatory environment of European Union to work on several cases.

"The EU has stricter laws surrounding data privacy, which can restrict the migration of structured data into the U.S.," Post says. "However, we either do work in the country where the project is or, depending on the situation and the country, we will work with lawyers that will allow us to put our information in our hosting environment in the U.K."

For companies that do not yet have an e-discovery strategy in place for structured data, Brunner and Post have some recommendations on how to get started.

"As with unstructured data, a key first step is understanding the data that you have and where it resides," says Post. "Many companies develop a data map for their unstructured data so that they are prepared to quickly collect information when they receive a legal matter or regulatory request. It's also important to include structured data repositories in

that data map—it's a good first step for taking control of the process."

In the meantime, Brunner and Post continue to focus their efforts on educating the marketplace and finding talented individuals to join their growing team. Currently, FTI is one of the only service providers of its kind in the legal marketplace. And, although it is likely that more players will enter the field within the coming years, Brunner predicts they will not come from the unstructured data e-discovery arena.

"This requires a very different skill set and discipline than what most current e-discovery providers have," Brunner says. "To do e-discovery of structured data well, you need a healthy mix of legal knowledge, business acumen and technical skills. Our clients know that FTI brings this to the table, as well as years of proven experience working with unstructured data. FTI has worked very hard to ensure that we're offering our clients the best people, processes and tools to handle any e-discovery matter."

As structured data becomes a frequently used term in the legal lexicon, FTI will continue to be a trailblazer in this arena. The team expects to continue on its aggressive growth in order to meet the ever-increasing demand of the legal and regulatory industries.

"This is a stellar team that really loves their job, and we're delivering real and very important results for our clients" Brunner says.

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FTI Technology provides software, services and consulting that empower corporations and their law firms to secure the best possible results for legal or regulatory matters—without disrupting their core business. Our comprehensive portfolio of software and services, and expertise give you unprecedented flexibility to prepare for and address key legal challenges worldwide.

FTI Technology software combines the industry-leading capabilities of Attenex® data processing and document review technology with the Ringtail® case management and production platform. Our software enables users to strategically manage, analyze and act upon electronically stored information (ESI) with the flexibility to tailor solutions that best meet the needs of their organization whether deployed on-demand or in an on-premise environment.

FOR MORE INFORMATION CONTACT:

Rob Brunner
Rob.Brunner@fticonsulting.com

Eric Post
eric.post@fticonsulting.com