

Finding a Needle in a Haystack

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The volume of data flowing through the banking business and accounting systems is monumental. But what happens if we need to find a single piece or portion of information that meets extremely specific criteria?

Perhaps regulators have asked you to comb through loan or deposit data. Or external auditors have suspicions of fraudulent activity but need to narrow down tens of thousands of records to investigate only the most likely.

These and similar tasks are like searching for the proverbial needle in a haystack. Done manually, this process can take days, weeks, or even longer. But technology solutions have dramatically developed over the last two decades, and the latest cutting-edge software was developed specifically to classify and organize data and has made the process much more efficient and straightforward.

This complex software conducts fine-toothed data searches to help organizations meet regulatory guidelines, answer stockholder and client questions, and fulfill audit and examiner requirements. Below are two real-life examples of how expert wielding of this tool can quickly cut through complex data analysis tasks.

Case 1: Proving Fairness in Lending

To comply with the Home Mortgage Disclosure Act (HMDA) regulation, Bank A needed to prove its lending practices were fair and nondiscriminatory. Their task was to show that their loan files showed no trends contrary to fair lending practices. In order to accomplish this, the bank needed to analyze over 200 electronic loan files by potential discrimination categories and match to loan approval or denial.

Manually categorizing and comparing each loan by income grouping, applicant demographic characteristics, loan purpose, and loan amount would have taken hundreds of hours. More hours would have been spent analyzing the data and presenting the results in a formal report that demonstrated no trends or patterns of discrimination.

The bank provided a basic electronic file containing all the loan information, and the analysis team categorized and analyzed the information and presented a report in fewer than three days. The bank was able to comply successfully and without any disruption to normal staff activities.

Case 2: Suspicions of Fraud

An international manufacturing company was being tested for fraudulent

general ledger transactions by its external auditors. The total number of general ledger entries was over 35,000 - far more than the external auditors could examine in depth manually. The solution was to create a net to catch suspicious entries, bringing the total down to a manageable number that the auditors could examine in depth.

The analysis team used their mathematical and analytical knowledge and software to search the company's data dump of the 35,000 general ledger entries, along with a listing of all general ledger accounts and employees who were posting general ledger entries. Data was screened for five key characteristics:

1. posted by persons who typically do not make journal entries;
2. posted during off-hours;
3. posted at the end of the period or as post-closing entries that have little or no description;
4. posted to unrelated, unusual, or seldom-used accounts;
5. contain round numbers.

First, the data was sifted for entries that met any one of the five fraudulent characteristics. To further refine the probability of finding fraudulent activity, filters were then combined to locate transactions that satisfied mul-

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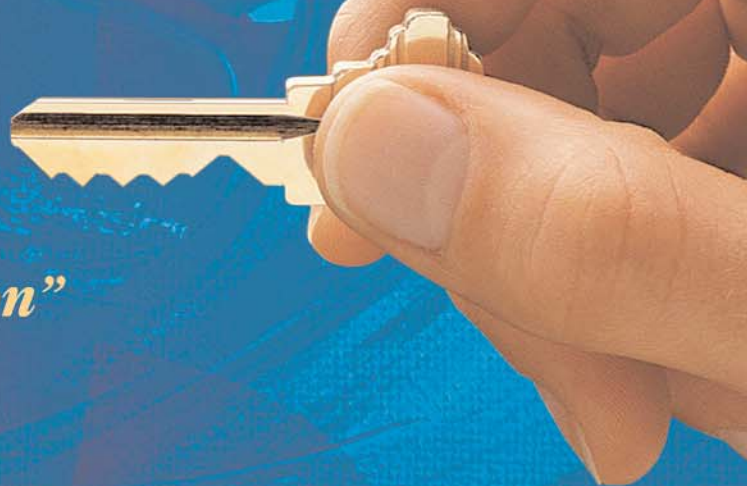
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tiple fraudulent characteristics. The data analysis team also matched these filters against the listings of seldom-used accounts and employees who do not typically post to the general ledger.

After only two days, the team had filtered the initial 35,000 entries to 573 that had the potential to be fraudulent. By eliminating 98.5 percent of the transactions, the auditors could focus their time on transactions that carried the highest probability of fraud.

An Efficient Solution to Complex Problems

In addition to efficiency, the software solution provides transparency and an audit trail. Unlike Excel or other spreadsheet programs, this software cannot change or edit information. A built-in utility enables an audit tool that at any stage in the process shows

how the results were arrived at and can recreate them, if necessary.

The trained analysts who use this technology solution can examine large amounts of data and quickly classify, filter, and analyze this information without requiring days or weeks of employee time. Data can be drawn from diverse sources, including print reports and older, legacy systems. A final report can detail action steps, including tables analyzing how the information was derived and how the data impacts the company's business and strategic goals.

About the Author
Justin McIntyre, CISA is a Supervisor, Senior Technology Services Consultant at S.R. Snodgrass, A.C. His technology audits cover a wide-range of audits,

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