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# Forensic Focus

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## FDA winning the fight against bidding fraud

By Jack Martin, National Leader, Forensic Data Analytics

Every dataset has a story to tell; and in the tendering process, that story can sometimes be one of fraudulent bidding activity.

Allegations of collusion aren't unique to any one industry. Recently, however, the Charbonneau Commission in Quebec turned the spotlight on possible collusion within the construction industry – specifically as it relates to the management of public construction contracts. Through the 2011 public inquiry, the commission found evidence of bid rigging and contractor collusion taking place on a range of contract types and over a number of years. It was a highly-publicized reminder that such activities more common than what we might think.

Certainly, wherever vendors are competing for work in a "lowest bid wins" environment, there can be those who attempt to game the system by rotating opportunities among colluding partners or working together to drive the price of a contract up. These actions are illegal, but that hasn't stopped some vendors from sharing their bidding strategies with others to swing the process in their favour.

Contract owners have been fighting bid rigging, collusion, and other fraudulent activities for some time. More recently, however, they've started using forensic data and analytics (FDA) to turn the tide. That's because, with good data, strong analytic tools and a forensic mindset, one can take data from any number of bids, dig deep within the numbers, and begin to identify "red flags" that point to corrupt practices.

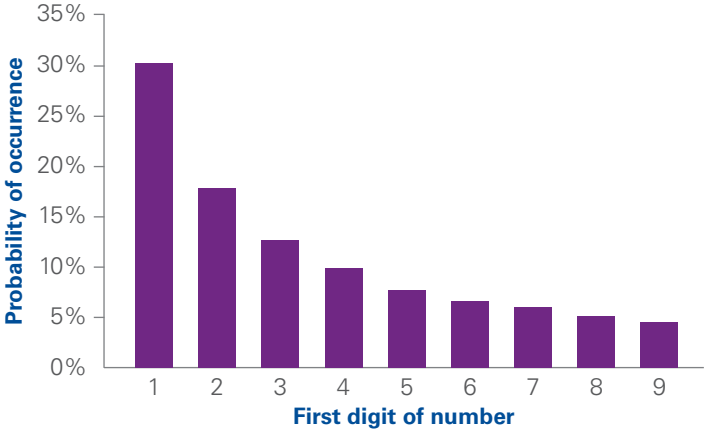
### Finding the anomalies

Using FDA tools, forensic accountants can pinpoint anomalies which speak to conscious efforts on the part of contractors to beat the system. In a fair bidding process, the differences in amount between winning and losing bids will follow no particular pattern. While the bid amounts themselves may all fall within a certain range, they will have no perceivable connection to one another. However, when contractors collude, and do so frequently over a number of contracts, they are consciously choosing to alter that natural dataset. For example, some colluding contractors will overbid on contracts in order to give a competitor the advantage (who will then return the favour down the road). If these partners do this over a number of contracts, that creates a pattern. Furthermore, if conscious overbidding is occurring by the same amount or percentage, that creates outliers which can stick out among natural datasets.

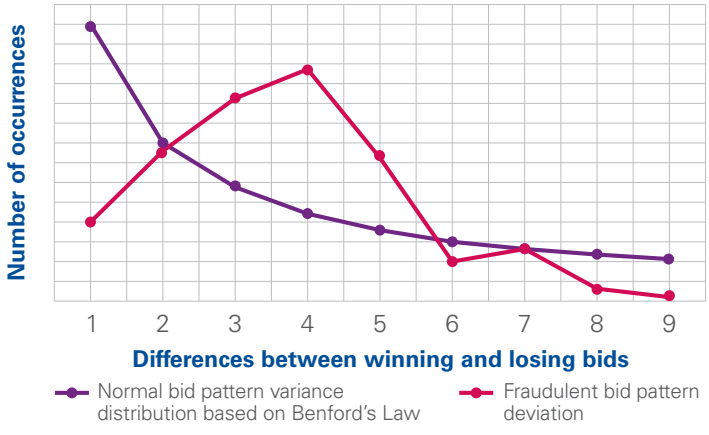
### Catching bid rigging with Benford's Law

Used for decades in financial audits and fraud investigations, "Benford's Law" (aka the "first digit law") proposes that the first digit of any value – for our purposes, the first digit in the difference between winning and losing bid amounts – will most likely be either 1, 2, or 3. Specifically, it's been shown that the number 1 will be the first digit in a number 30% of the time, 2 at 18%, and the following numbers at decreasing frequencies. Therefore, when the dollar amount separating bids begins with a digit at a frequency that differs from Benford's Law, that can be another sign of bid rigging.

**The first digit phenomenon**




**Example case of fraudulent bidding pattern**



There are other methods of detecting fraud through FDA, but ultimately it comes down to using FDA tools to pinpoint potential fraud or irregularities within large amounts of data. And when it comes to making sense of those anomalies, having strong FDA capabilities can allows users to dig deeper into those datasets to find patterns in specific years, through a specific type of contract, or even among specific bidders.

### Using data to accurately value the damages

All combined, the insights gleamed from FDA are critical in helping contract owners see what kind of contracts are more susceptible to fraud than others (e.g. road repair over water and sewer main work) and also help quantify damages from previous instances of collusion. In the wake of the Charbonneau Commission, for example, the Québec Government brought into force the Voluntary Reimbursement Program to recover amounts improperly paid in the last 20 years as a result of fraud or fraudulent tactics in connection with public contracts. Under the program, proposals for reimbursement submitted by enterprises that may have been overpaid for public contracts during the last 20 years are received and analyzed impartially. Using FDA, we worked with various levels of government to quantify the value of possible damages, which could then be used to negotiate higher repayment amounts.

### Collecting the data you may need

Naturally, for FDA to be effective, it requires good data. Herein, it can be a challenge to find companies who keep enough records of both winning and *losing* bids to provide the kind of robust datasets needed for fraud detection. For this reason, the need to maintain records and install methods of collecting that data is even more important than ever. After all, you can't analyze what you don't have.

Today, the methods and tools already exist for FDA to be used effectively in the fight against bidding fraud. Moving forward, however, we can expect to see those capabilities going even further. That means using FDA that provide more statistical analysis rather than pure data analysis and running correlations and regressions to find outliers. Expect more advanced software and processes like this to turn a brighter spotlight on fraud.

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KPMG Forensic (Canada) has offices and qualified forensic professionals throughout Canada, with major offices located in Halifax, Montréal, Ottawa, the Greater Toronto Area, Southwestern Ontario, Calgary and Vancouver.

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