MINISTER GORDHAN'S BUDGET SPEECH HINTS AT USING BIG DATA TO GIVE A BIG BEATING TO CORRUPT OFFICIALS

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Mining has commonly been a catalyst for exponential development. Coal mining brought about the industrial revolution, diamond mining resulted in Kimberly being the second city in the world to have electric streetlights, gold mining turned the once penal colony of Australia into a cutting edge country, and now data mining is propelling the digital revolution to dizzying heights.

As mentioned in Finance Minister, Pravin Gordhan's Budget Speech, government spending for 2017 is estimated at R1.56 trillion. This is a large sum and citizens and government have an interest in ensuring that these funds are being spent effectively and efficiently for its intended purpose – not to be pocketed by corrupt officials. Minister Gordhan mentions that government's central supplier database is now fully operational and that it "enables government to know who it is doing business with and to use technology to reduce opportunities for fraud and corruption." He may well be hinting that big data mining is the solution that will help reach this objective.

Big data mining is a method of analysing vast amounts of data to uncover previously unknown correlations. For example, big data techniques have the potential to uncover patterns of fraudulent activity in public procurement by combing through data sets on government tender bidding processes and determine who bid on a job, how much their bid amounted to, and who was ultimately awarded the tender. This can be illustrated using research done by the Corruption Research Centre in Budapest. The researchers examined enormous data sets of public procurement procedures from EU countries, and found an "ordinary" pattern. This allowed them to analyse inferential statistics and come to the conclusion that corrupt behaviour had likely occurred when there were deviations from this "ordinary" pattern. They explained the method as follows:

As each awarded contract is tracked and represented visually by a tie between public body and private companies, a clear pattern emerges, which links certain state organisations to firms which are repeatedly awarded contracts. These "network ties" are then weighted by the corruption risk of the underlying contracts using the authors' novel corruption indicator, the Corruption Risk Index (CRI). Unsurprisingly, the relationships which are found to have a high risk of corruption generally involve state bodies and companies who are awarded contracts on an implausibly frequent basis.

A further example is the use of big data to expose corruption at Medicare, a massive American health insurance system. It had been plagued by fraudulent benefit claims by doctors, pharmacists and other medical professionals who claimed for procedures that never took place or for medications at an excessive amount. In 2014, Medicare lost over US$60 billion as a result of such fraud. The Medicare Fraud Strike Force was established to tackle the problem and endeavoured to make big data the cornerstone of its investigative effort. It relied on centralised real-time information of Medicare benefit claims throughout the country. This amounted to millions of claims per day requiring analysis for suspicious patterns. If the analysis showed an area with several suspicious billings, the task force would conduct a more intensive investigation into that area. The availability of real-time information helped facilitate and speed up the process.

The above is a great example that South African anti-corruption agencies could rely on. The abovementioned method would allow us to monitor all transactions entered into between government entities and third parties to establish or uncover suspicious patterns or relationships, and conduct further investigations where irregular spending or fraudulent behaviour is suspected.

Of course, privacy rights concerns that arise out of the use of big data, must be weighed against the State's obligation to fight corruption. Privacy rights advocates may argue that the Protection of Personal Information Act, 2013 ("POPIA") prohibits data mining to build a profile on a person. As much as this may be the case, it is important to remember that POPIA's protections do not apply where processing of personal information happens for the purposes of the prevention, detection and identification of the proceeds of unlawful activities and the combating of money laundering activities.

In terms of the Budget Speech, R500 billion a year is to be spent on the public procurement of goods and services, to acquire infrastructure, and operational inputs required for effective service delivery. This is a substantial amount, and it is necessary that we ensure this money is spent for its intended purpose, and not squandered in the hands of corrupt public officials and their counterparts in the private sector. The use of big data could play a vital role in monitoring and curbing this corruption and ensuring that public funds end up benefiting their rightful recipients: the people of South Africa.

Sasha Beharilal & Yashoda Rajoo

PPM Attorneys

Johannesburg