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4 technologies helping us to fight corruption



Image: REUTERS/Aly Song

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Advances in technology have led to unprecedented, rapid access to vast amounts of data on societies, the economy and the environment. To keep up with this, governments, organizations, and citizens are in a new state of experimentation, innovation and adaptation. The ‘data revolution,’ which refers to both quantities of data now available and technological innovation, has the potential to tackle key issues in society including corruption.

Aside from serving as prerequisites for democracy, access to information and transparency are key tools in the fight against corruption that lead to openness and a level playing field for both governments and markets. The emergence of these tools has the potential to push forward the anti-corruption agenda through revolutionizing methods of corruption detection, prevention and

analysis. [The recent leak of financial documents](#) is just one example of how individuals and organizations are now employing different methods to harness this technology and reduce the opportunities for corruption.

1. Big Data

Technology is being used to create transparency across organizations by increasing automation, accuracy and frequency across processes. International organizations are at the forefront of this revolution developing innovative software to detect and deter fraud and collusion. As identified by the [United Nations](#), more accessible and better quality data will lead to improved policy decisions and greater accountability and several of their recent reports outline how the data revolution will be incorporated into sustainable development commitments.

This involves sharing technology and innovation through tools such as big data, advanced networks and data-related infrastructure to improve efficiency, address capacity problems, identify critical gaps, increase collaboration, and create an incentive to innovate for the common good. Big data is primarily being employed in the fields of public health, trade and taxation where predictive analysis and visualizations that determine trends, patterns and relationships in massive volumes of data are being used to gain valuable insights. An example of this is the Australian Taxation Office using big data to search through vast amounts of records to find evidence of the use of tax havens, and data-matching to identify small online retailers that are not meeting their compliance obligations.

Traditionally it has been difficult to expose corruption due to large quantities of data. However, digitalism and the popularity of big data has led to new data management techniques to prevent fraud and abuse in the public sector. Fraud analytics are now able to detect patterns of suspicious transactions in areas including taxation and healthcare and with real time detection, agencies have been able to detect, stop and remediate fraud [resulting in billions of potential cost savings](#). Countries are also developing new methods for data

development and sharing such as the ‘World Statistics Cloud’ that aims at improving the quality of information and reducing the costs of producing public data.



Image: REUTERS/Caren Firouz

2. Data Mining

Multilateral development banks (MDBs) are following suit with a range of innovative tools to monitor and oversee processes. In public procurement, data mining is being used for auditing in order to monitor when governments are issuing bids and to identify red flags, patterns of collusion and false information. It is also being used to identify ‘corrupt intent’ [in payments or transactions through data visualization](#). Researchers at the [Corruption Research Center Budapest](#) have examined huge volumes of data sets of public procurement procedures from EU countries by searching for abnormal patterns such as exceptionally short bidding periods or unusual outcomes (e.g. no competition for the winning bid, or bids repeatedly won by the same company).

Anti-corruption software tools are being designed specifically for detecting and responding to fraud, including “intelligent mining” of data sets and administrative procedures. Both the European Commission and Transparency International have developed data analytics software that cross-checks data from various public and

private institutions. [This software helps to identify projects susceptible to risks of fraud](#), conflict of interests or irregularities as well as data mining tools [through open source procurement monitoring and analytics portals](#). The effective integration of these tools into the e-governance and e-procurement practices of the governments would not only enhance decision making but also bring greater transparency through the simplification of processes.

3. Mobile Applications

Mobile technology and applications are being utilized to harness data and gain faster insights. In developing countries this technology is being used to empower citizens in remote areas, making information more accessible and there is no reason why the success of this technology could not be used in the fight against corruption.

Examples of this include the creation of applications and websites to detect and deter corruption such as 'I paid a bribe' that have encouraged the World Bank to create its own version. The 'Integrity' App is aimed at giving citizens access to World Bank financed projects and the opportunity [to immediately report on concerns of fraud and corruption](#). Through the app, users can directly send information relevant to bank financed projects, e.g. photos of a half built school or recording of a bribe.

In the future, there will also be features to detect the exact location of these projects and QR tags to provide specific information on spending and the project timeline for completion. In areas where smart phones are less common, a separate mechanism will allow anyone with a basic mobile phone to contact the Integrity department of the bank free of charge. Mobile phones are also being used in Integrity (INT) investigations of fraud and corruption in World Bank financed projects and the hotline is said to receive 26,000 hits a year. In the last year, 370 cases were directly related to Bank financed projects and this has led to 34 sanctions for firms and individuals, the prevention of numerous tainted contracts before they were awarded and the development of precautions for high risk

projects.

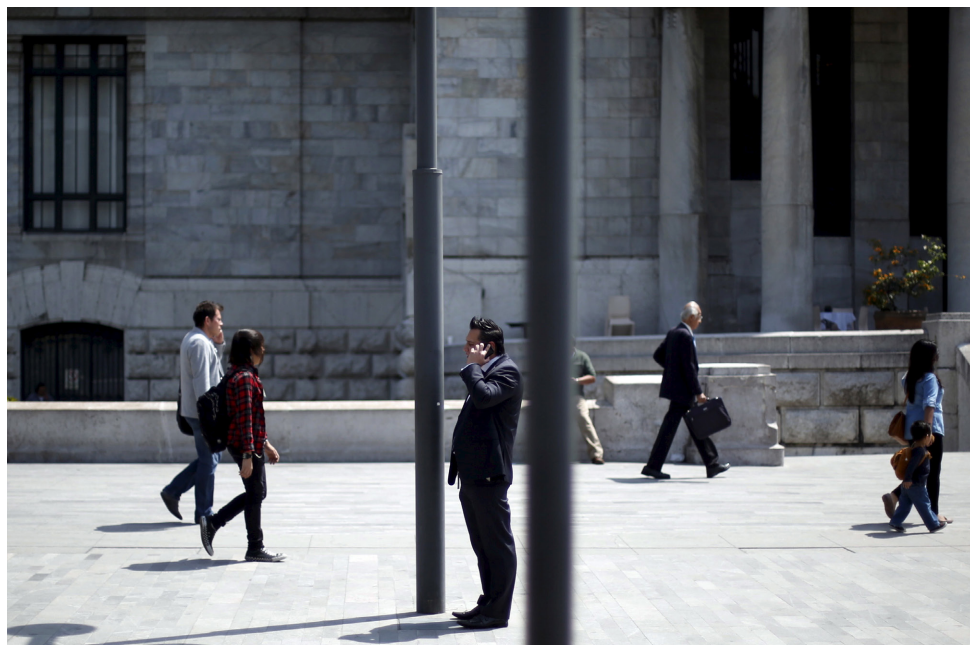


Image: REUTERS/Edgard Garrido

4. Forensic Tools

The UN's Sustainable Development Goals (SDGs) have spurred increased investment to improve data for monitoring and accountability. To share innovation and technology for the common good, the UN has proposed to create a global 'Network of Data Innovation Networks' that would bring organizations and experts together to contribute to the adoption of best practices for monitoring and improving efficiency.

In the public and private sector, forensic tools for auditors such as Self-Monitoring, Analysis and Reporting Technology (SMART) are being employed to combat corruption risk. Along with technological advances, these tools are increasingly sophisticated enough to handle data velocities as they can involve real-time analyses of transactions, predictive modelling, anomaly detection and risk-scoring algorithms seek to [flag or stop potentially improper payments much sooner in their procure-to-pay processes](#).

To strengthen internal processes and prevent fraudulent practices, data analytics are able to periodically investigate transactions in procurement and payment models, check for anomalies and quickly

identify suspicious transactions, such as illicit financial flows. Other benefits of technology that lead to detection and prevention include the automation of processes that remove human agents, e.g. contracting officials and corruption opportunities from procurement operations. This is targeted at reducing bribery in operations and can be employed in any system. At the country level, governments are moving towards open data that removes opportunities for discretion (in Moldova for example). The aim is to not only make processes more transparent, but also to reduce the reputational risk for the government.

This proliferation of technology (big data for capturing, data mining for detecting, mobile applications for increasing accessibility and forensic tools for reducing opportunities for corruption) has the potential to create unparalleled opportunities for transparency and anti-corruption. However, technology is not a quick fix or fast solution. To truly harness these trends, governments and organizations have to be quick to adapt and to act. In some cases, financial and technical investments in innovation will be required at all levels to make these changes happen, coupled with public and private sector collaboration to help officials and agencies make the leap towards new technologies. In other circumstances, international organizations and MDB's are making the process easier through the development of sophisticated tools and next generation software to detect red flags and mitigate risks.

The new report, Partnering Against Corruption Initiative - Infrastructure & Urban Development, [is available here](#).

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