Global views

Is Big Data truly capable of "disrupting" the way we practice asset management? What opportunities and pitfalls does it create?

AFRICA

Chidi Umeano, Principal Consultant at Codub Consulting Ltd, says with more focus on predictive maintenance strategies, Big Data has a major role to play.

In a nutshell, Big Data is about trying to predict the future. Data has always existed; the issue now, I think, is about "meaningful" data.

Yes, there has been an increase in the volume of data being generated today and the possibilities are huge. However, our methods for analysing huge volumes of data lag way behind. It is important to note that it is the systems and tools used to analyse and understand such data that have the potential to disrupt the way we practice asset management.

Nevertheless, there are still opportunities. Planning and forecasting asset behaviour and production patterns more insightfully can help predict and avoid asset downtime, increasing return on investment. Matching data samples around different asset operating parameters with resulting production outputs can reveal how different operating levels affect assets and their components. Such information allows us to run assets at the most efficient production rate while keeping equipment lifecycles at maximum capacity, truly optimising operations.

Failure to produce relevant data for decision-making is a major drawback resulting from the lack of very intelligent analytic tools. Equally, both data mining and data capturing components like sensors carry cost implications.

One needs to balance the cost of sifting and analysing Big Data to predict an asset failure with the consequence of the asset failure. This is where the focus should be, as asset management is about realising value from assets.

CANADA

**John Rivenell** of SageData urges caution: pitfalls are part and parcel of disruption.

Big Data will be disruptive. Most disruption will be good. But some inevitably will have bad consequences. This applies to all walks of life, including the management of our assets.

We like predictability. That the electricity stays on. That the car starts in the morning. Part of the path to that is the establishment and rigorous prosecution of SOP – standard operating procedures. Find a way that works. Repeat. Do not vary. The foundation of many Quality Assurance Programmes. Part of what gives us safe food.

But if we never changed, we would still be blacksmiths and millers, so, cosy though the status quo is, we must move forward. Big Data is one of those moves. We will use Big Data to help us make decisions, maintain and develop our assets. Because we are human, several cautious, careful and successful changes will inevitably lead to the overconfidence that precedes a major disaster.

A Canadian example comes from the collapse of the East Coast fishery. Concerns about the dwindling stock of cod were dismissed because "the data showed otherwise" – catches were increasing each year. But not because there were more cod. Just because there were more fishermen with better equipment more effectively hunting increasingly scarce fish. The data was good, the interpretation was bad.

Big Data gives us a better view of the state of our assets. The opportunity is for more efficient allocation of resources. The pitfall is overly casual interpretation of selected data.
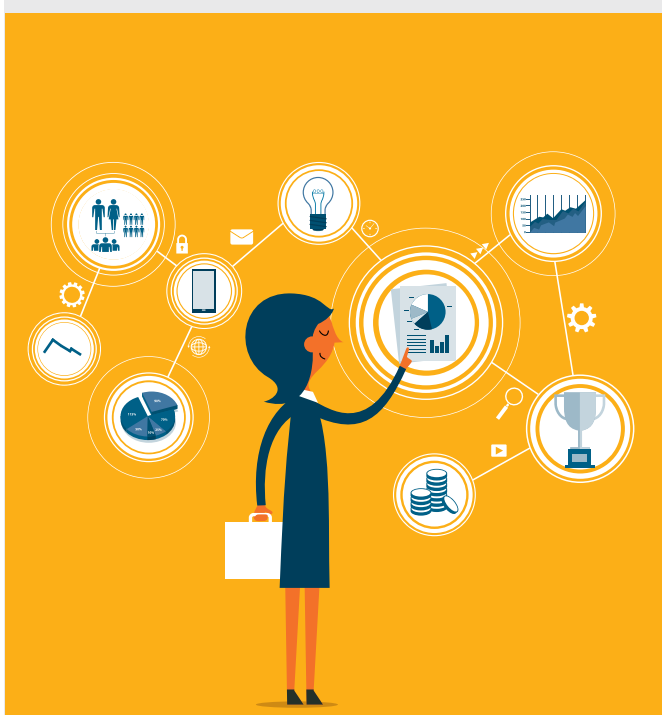
For **Patrick Bossert**, Exec Director of EY's Infrastructure Intelligence Strategy, Big Data has the potential to distract more than disrupt.

For infrastructure asset managers, an asset information strategy primarily based on a Big Data approach is pretty much an admission of failure. It says the business doesn't really know why it's collecting the data, or what to use it for.

A Big Data approach is really valuable in sectors like retail, where spotting and capitalising on emergent trends is the primary driver for creating business value. But in infrastructure it's not a disruptor, it's a distractor. The rewards are lesser and have the potential to divert skilled engineering attention from realising the bigger prizes.

I strongly advise asset managers to adopt a "relevant data" strategy instead. Most asset estates are big and complex, so the data is likely to be "big" already.

A "relevant data" approach means:

■ first defining the cost, performance and risk outcomes the business wants to achieve – for example, changing policy from condition-based to risk-based management, while reducing cost and operational risk exposure
■ then defining the decision-making tools and processes required to support those outcomes, and specifying the information required as inputs to those decisions
■ then putting a strategy in place to make sure the data is collected and managed well enough to control the risk of doing things differently to realise those outcomes.

This approach is focused, and enables companies to get the best return possible from their information investments. I certainly prefer my data just "big", not "Big", and I'll leave it to others to drink from their "data lake".

BRAZIL

The opportunities are revolutionary, says MetrôRio's **Ricardo Malato** – but without a grounding in data processing, so are the potential pitfalls.

Big Data can change the way we do asset management – helping asset managers make more effective decisions at a much higher speed.

With Big Data, asset managers have the opportunity to save a lot of the time involved in anticipating maintenance, improving maintenance plans and restoration, and developing preventive materials within a particular asset base. Moreover, Big Data would make it possible to review the whole investment policy, including renovation of physical assets, since the variety of data and information would greatly improve assessment of the risk–cost trade off. It could also prevent losses resulting from wrong decisions caused by insufficient information.
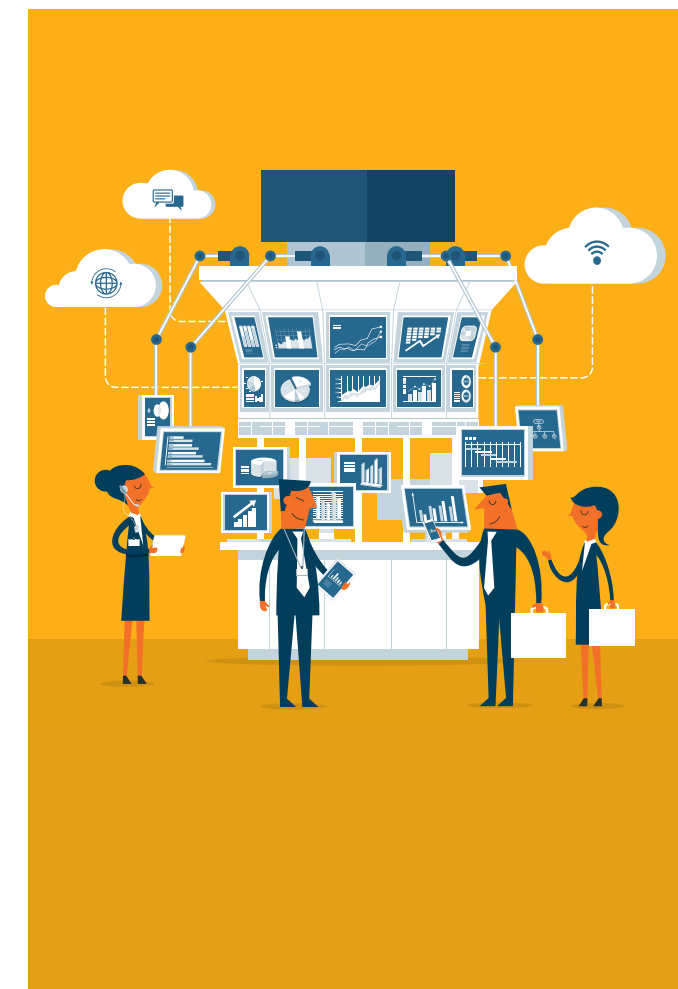
However, we must be aware that the challenges of storing, analysing and processing large datasets present a bottleneck for many companies. Therefore, companies and asset managers must have a good knowledge of statistics and data processing to avoid falling into traps. One of the secrets is to understand what data is actually relevant to decision-making, and to understand correlations present in the data.. Poorly analysed data can give us information that leads to contradictory or misleading conclusions.

In summary, Big Data offers many benefits for asset management, such as reduced maintenance costs, extending asset lifecycles, and so on. However, companies and managers must know how to deal with this revolution in data.