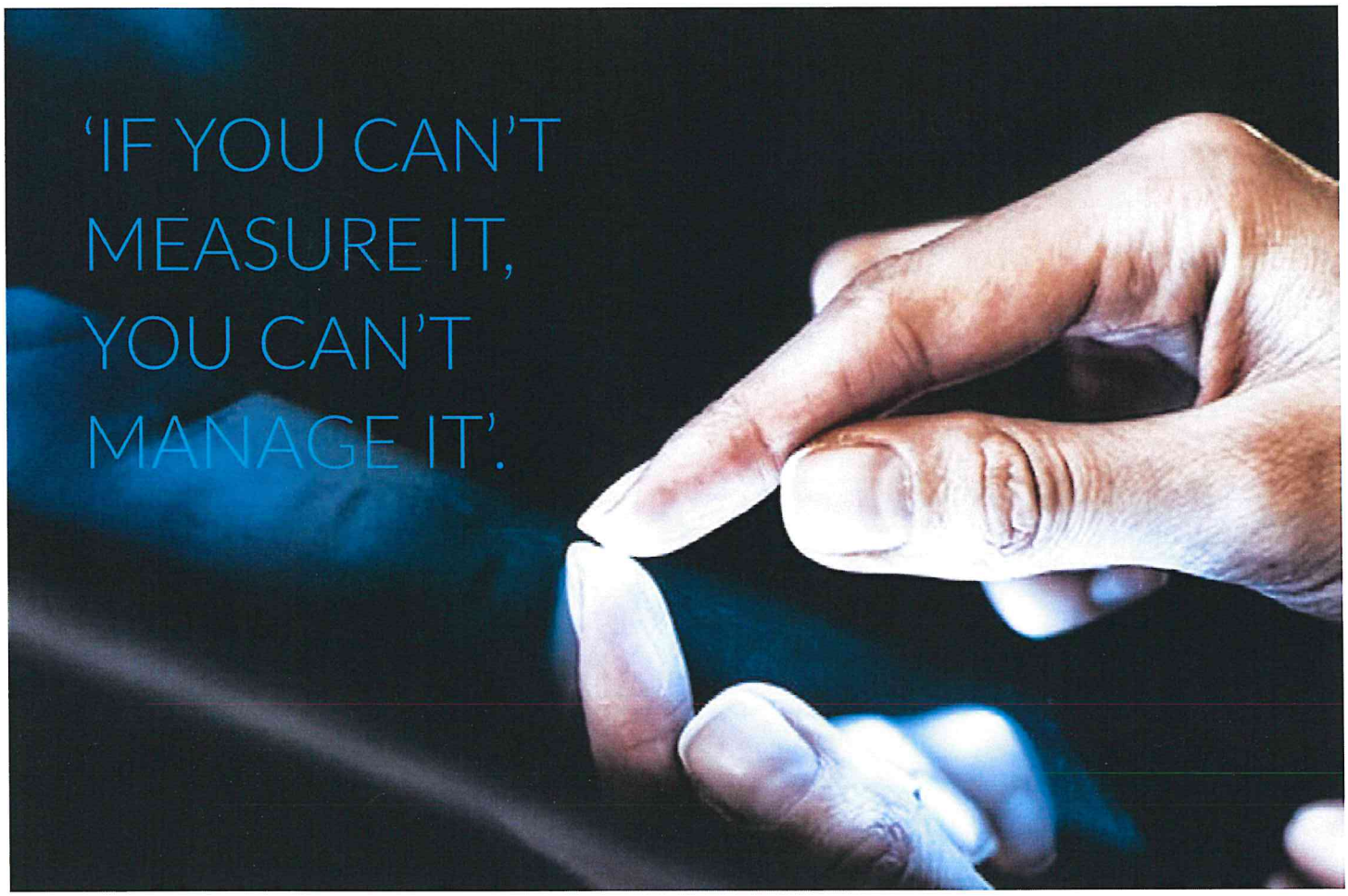


The reality is that most municipalities have various data bases and various truths. These BIG datasets reside within various systems. I acknowledge that mSCOA has made these more integrated than previously, but they are not yet seamless. Electricity data doesn't speak to the water data base, the valuation roll and the financial system data sets are not the same, the town planning layer isn't up to date, the financial accounts numbers are duplicated, the unique identifier for properties, the Surveyor General's code, sometimes isn't unique. The seamless integration between municipal systems is prescribed but operationally we haven't yet arrived. The slippage is material in terms of municipal revenue. As a municipality using technology to measure your data cleansing efforts towards complete and accurate billing ought to be a primary focus. Monthly reports can show you where the discrepancies were last month, which have been fixed and what still needs attention.

Let's talk about the GIS or geographic information system (GIS). This is a framework for gathering, managing, and analyzing data. GIS integrates many types of data. It analyses spatial location and organizes layers of information into visualizations using maps and 3D scenes. Smart mapping is a technique that allows us to overlay current imagery over older imagery. Through applying change detection parameters, we can see where changes to properties and buildings have been effected, where vacant land is no longer vacant, where landfill sites are encroaching into wetlands or where unauthorised structures have been erected. The GIS presents a powerful picture for local government in terms of business intelligence. National Treasury's mSCOA segment reporting requires transactions to be reported against prescribed segments. The regional segment is a critical element indicating where expenses have been incurred and the origin of revenue.

Pictures tell a thousand words. Technology creates choices about what pictures or the imagery. We are most familiar with Google, it gets us between here and there, we use it to avoid traffic jams, it sometimes gets us lost and sometimes if we follow Google we would land in the sea, it is not a commercial tool. Ortho-rectified aerial photography is the preferred option for planning and

certainly a must for the preparation of property registers and valuation rolls. Technology also offers oblique imagery that includes the elevation of the improvements. Digitisation can assist you to calculate the volume and extent of various improvements. LIDAR which stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. This technology may be used for measuring underground services and infrastructure.


Drone technology is another recent innovation. High resolution digital imagery enables municipalities to manage areas such as their cemeteries and informal vendor trading areas. Drones also enable access to inaccessible areas within your municipality, returning views over forestry areas, solar plants, water courses etc. We saw the acceleration of 3D printing during Covid-19 lock down. It is estimated that within the next 20 years every household that has a TV today will also have a 3D printer. This does pose interesting questions about copyright laws and patent rights.

**As we move from real to virtual there are challenges.**

Can your avatar be held liable for your intellectual property?
Could your emoticon be considered defamatory?
Can your thumbs up WhatsApp be considered as the acceptance of a contract?

We have all heard of smart meters, most municipalities have already implemented pre-paid electricity meters in certain areas. Utilities are big business for local government. Various innovative solutions are available—it's just a matter of making a choice on what will work best for your municipality's utility profile. Viven Perumal, Conlog's marketing director, says it better than I can: "The timing is perfect for utilities to embrace the shift to digital, to do more with less, to improve efficiencies and their financial situation at the same time." Smart water and electricity meters aren't the only meters and sensors around. There are sensors for opening and closing server room and safe doors, there are sensors that calculate how many brush cutters are on the Parks & Gardens vehicle at the beginning and end of every shift. Water meters measure bulk water at the point where the water is received from the bulk supplier. Household meters measure consumption per household. The business intelligence from this data points to irregular connections, leakages, all revenue related.

Meters and remote sensors can send you information about the moisture content of the soils in your greenhouses, report the status of the humidifiers in hospital wards, alert you when your cattle step outside their camp. The applications are endless.

The lockdown regulations established onerous admission requirements to various public spaces, including municipalities. This lead to bottle necks at entrance ways, not healthy for any of us. How many municipalities would be able to locate and contact people who visited their municipality in the event of an infection on a specific day? Not many. Clipboards, scruffy pages and pens swimming in plastic containers of disinfectant are just

horrible. The technical solution involves a tablet and digital access forms at the entrance or via a link to your smart phone ahead of your visit. This generates reports that are accessible and easy to read. A simple digital form provides the solution, reduces the friction, adds professionalism and enables accurate reports to be generated. Live business intelligence is available on a dashboard on your smart phone.

As local government collections took a serious dive, some as low as 50% earlier this year. All municipalities had to look long and hard at their cash flows and reduce costs wherever they could. Managing the cash flow and having access to this analysis on a real time basis is supported by technology.


Paper-based processes have had to go on-line. We had to change our view of the world real time. Clients and ratepayers who were familiar with our banking halls were compelled to find e-commerce solutions.

The economic effects of Covid 19 are going to be with us for many years. As local government we must acknowledge that businesses and households have taken an enormous knock. We must find new sources of revenue or different savings options. We must work smarter, faster and using technology this becomes possible.

Whether you are counting your steps to maintain your health and fitness, managing your calendar scheduling or monitoring your municipal cash flow to check you can make your next payment run technology is assisting you and can do much more.

**Embrace the technology and your world will be so much easier to measure and manage.**