Navigating data overload in South Africa's healthcare sector

By Willem Botes

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With digital transformation and rapid advances in technology ensuring change in the market is swift and constant, South African businesses must keep up, or face being left behind. Agility is the key to business success, and the healthcare industry is no exception.

Source: Pixabay

A recent study found that businesses that achieved successful agile transformations typically delivered 30% gains across key areas like efficiency, operational performance, customer satisfaction, innovation, and employee engagement. And, just as in any other industry, the best way to stay agile in the healthcare sector is by leveraging insights into users and markets to make data-driven decisions and inform a future roadmap and forecasting.

Such data is in plentiful supply these days. Around the world, data is being generated at a tremendous rate, particularly since Covid drove a sharp increase in remote and hybrid working. Predictions from the International Data Corporation suggest that the amount of digital data created between 2020 and 2025 alone will be more than double the total data created since the dawn of digital storage.

Data informs development

In the healthcare sector, patient information is increasingly processed online and Covid has driven the advent and growth of virtual consultations. Data insights have the power to impact industry development and innovation if the data is aggregated, synthesised and presented effectively.

As the quality, volume and frequency of new data improves, healthcare has a golden opportunity to improve too. When legacy systems are updated and formerly analogue processes digitised, reams of new data points and insights are generated. Companies can use their data to innovate more, improve processes and system efficiencies, create better products, services and experiences for their customers and patients, and provide better employee experiences for their own staff.

There is already evidence of these improvements in both the public and private sectors in South Africa. The City of Johannesburg, for example, announced in April this year that it would begin digitising patient records through an e-health solution to help drive efficiency and better patient care.

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The long-term aim is to integrate these digital health records into other systems nationally and allow the City to treat its residents in a more insightful, reliable and holistic way.

Another advancement has been the introduction of a fully integrated virtual consultation platform in June 2021. The system makes home-based care accessible in South Africa by allowing healthcare providers to connect with patients no matter whether they have medical aid cover or not, or which medical scheme they belong to.

The platform is accessible at any time from any device – smartphone, tablet, laptop or desktop – and also allows healthcare providers and patients to additionally connect with other providers from multiple healthcare disciplines without having to switch between systems.

There are also technology solutions geared towards mental health. Panda, a mental health support app launched a year ago, democratises access to mental health support and helps people find the right care at the right time.

The app uses its data to gain valuable insights about mental health in South Africa: it has, for instance, revealed a critical need for support for anxiety, depression, stress, sleep-deprivation and self-esteem.

Enter machine learning to overcome data challenges

A challenge remains, however. So much of the data being collected and stored by these platforms and solutions is unstructured and incompatible with other data. Therefore, the first hurdle is harmonising all the data across the organisation and the services it delivers.

The second is determining which data should be kept and which deleted. The third is assessing, classifying and interpreting the data effectively, so that it can be utilised for decision-making.

This is where automated analysis comes in. Machine learning (ML) technology is the key to dealing with large amounts of data and extracting the meaning and value that it offers.

Processing unstructured data with technology-driven solutions can give pharmaceutical, clinical research, and other healthcare organisations a real competitive advantage.

As a case in point: ML and artificial intelligence (AI) are being deployed to speed up drug development processes and ensure that drugs are delivering optimal benefits to patients. The ability to process and interpret large data sets at speed means ML technology can also make predictions around bio-activity, toxicity and physicochemical properties beyond what human analysis is capable of.

Furthermore, AI and ML can be used to identify traits and characteristics in imagery that the human eye cannot detect or process on the same scale – cutting down on waiting times and aiding diagnostic accuracy.

Machine learning is also being utilised to improve supply chains. It can identify production bottlenecks, reduce the length of batch disposition cycles and monitor in-line manufacturing processes to ensure safety and quality.

Using the power of the cloud

ML and AI technologies are increasingly highlighting how they can empower leaders to make better strategic decisions with previously untapped information.

The encouraging reality is that cloud computing is now more accessible and scalable than ever before. As more and more businesses move to the cloud, tailored data solutions are available to healthcare organisations from start-up to multinational.

Using a cloud-native services platform, businesses can easily capture, classify, index, enrich and visualise their data, whether physical or digital. This tool, which uses machine learning technology and Google's AI capabilities, enables teams to present their data in a usable format and pull out the information that is relevant to their needs.

If analysed properly, data can deliver invaluable insights about patients, therapies, operational processes, and more. The healthcare industry in South Africa should be taking advantage of the technology at its disposal today – because the chances of the next big medical breakthrough being discovered by analysing data are higher than they've ever been.

ABOUT WILLEM BOTES

As Iron Mountain's head of solution specialists, South Africa, Willem Botes has over 20 years of experience working with customers' business challenges, adding value through harnessing data to help make better informed, business critical decisions. In his role he is enhancing and innovating processes using new technologies. He is a customer-centric leader who understands clients' challenges and listens to their business priorities.

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