Commonwealth Private

How data-led innovation is transforming businesses and the customer experience.

Digital twins are just one innovative technology that uses data to reimagine banking products and services.

Data is the underlying driver of utility and value for emerging technologies such as artificial intelligence, machine learning and the Internet of Things (IoT). Data, or more importantly, the insights gained from ever-expanding data sets, is fuelling innovation.

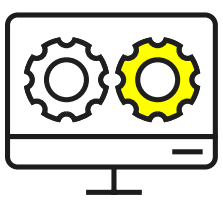
At Commonwealth Bank, Louise Anderson leads the customer innovation portfolio within the Emerging Technology team. For Louise, data is the engine driving exciting initiatives, including new online banking features to help customers optimise spending and supporting businesses to strengthen their environmental, social and governance (ESG) reporting.

Another area of focus is a data-driven technology with new and profound applications for customers and businesses – digital twins.

Louise explains that "digital twin technology uses data to create a virtual replica of a real-world business or process. It replaces traditional process mapping and can simulate the interplay between different aspects of a business in a real-time digital environment."

"Where traditional artificial and machine learning models use historical data to identify patterns and predict likely occurrences, digital twins can tell you what's going to happen and what you should do about it," Louise says. "In that way, it's uniquely prescriptive."

Digital twins in action



In industries like manufacturing, digital twins have been used to build digital replicas of production lines to identify efficiencies. For example, the equipment performance can be monitored using data from sensors, and changes to the process can be modelled, understood and optimised.

For the Bank, the technology helps with two primary activities, says Louise. The first is in simulating the impact of decision-making on business outcomes, and the second is making prescriptive recommendations on process improvements as a result.

The team is currently experimenting with the use of digital twins in areas such as customer and technology operations. Louise says that digital twin technology has helped build an understanding of the processes used by CommBank's operations team, and identify improvement and optimisation opportunities to support outcomes for customers and the business.

Digital twins can also be used to simulate and observe the impact of events, such as handling an influx of home loan applications or hiring extra people. This supports strategic decision making.

"The Bank's operational processes often traverse many steps, involve different teams and can combine manual and automatic processing," Louise says. "In our experiments, we have collected relevant data and expressed the end-to-end process using digital twin technology."

The next frontier for digital twins

Louise points out that operations is just one example of an improved outcome using digital twins. The technology also applies to any organisational process and, even more importantly, understanding complex, interconnected processes.

"This is where you can build out more expansive digital twins that encompass all these processes. Ultimately, you could move towards having a virtual replica of the entire Bank or even the industry as a whole. At that point, you could use the technology to understand the impact of macro changes, like new economic policy developments."

In Louise's view, digital twin technology has immense potential but remains in its nascent stages. There are also challenges to overcome when considering broader applications. That includes having a common language for effective data sharing and navigating data inputs that aren't always high-quality or perfectly structured.

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