

Deliver Improved ROI and Make Fewer Mistakes

# Understanding Business Digital Twins



*"Business Digital Twins" by GenAI platform, Picsart. All images are AI generated.*

**B**usiness digital twins are a manifestation of digital twinning technology applied to the world of commerce. To grasp their essence, let's start with the digital twin concept itself. A digital twin is a virtual representation of a physical object or system. This representation is created through a combination of data from sensors, simulations, and other sources, offering an authentic reflection of the real-world entity it represents.

In the context of business, a digital twin takes this idea and applies it to the entire organisation or specific aspects of it, such as processes, products, services or the markets in which it operates. It can be thought of as a dynamic, data-driven replica of a business entity. It's not just a static model like a spreadsheet; it evolves and changes in real-time as new data is collected and analysed.

## How Business Digital Twins Work

Business digital twins are constructed by integrating various data sources and technologies. Here's an overview of the key components and processes involved:

1. **Data Integration:** Business digital twins rely on quantitative data. This data comes from internal sources like operational systems and management accounts, and external sources like market data, weather forecasts, and social media. This data is aggregated and processed to create a holistic view of the business.
2. **Simulation and Modelling:** Advanced modelling and simulation techniques are employed to replicate the behaviour of the business processes, systems, and interactions. These models are used to predict and analyse various scenarios.
3. **Real-time Monitoring:** Business digital twins continuously monitor the actual state of the business, collecting real-time data from various sources. This data is then compared to the digital twin's model to identify deviations and trends.

4. **Analytics and AI:** Machine learning and artificial intelligence algorithms can be used to analyse the data collected. Advanced approaches can uncover patterns, make predictions, and suggest actions to optimise operations.

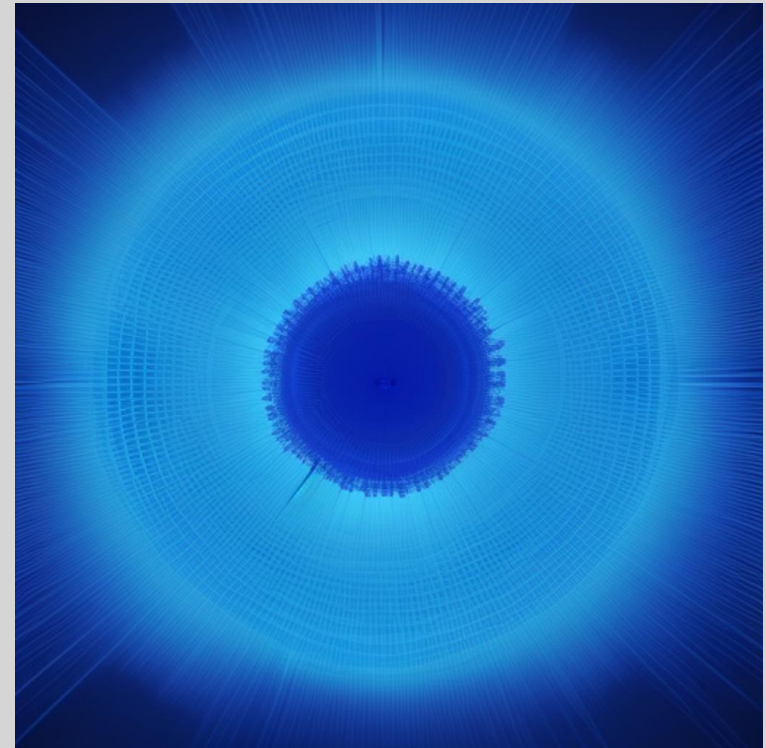
5. **Visualisation:** The insights generated by the digital twin are presented through intuitive visualisations and dashboards. This allows decision-makers to understand complex data quickly, change assumptions and make informed choices.

## The Value of Business Digital Twins

Now that we have a basic understanding of what business digital twins are and how they work, let's explore the substantial value they bring to organisations:

1. **Improved Decision-Making:** Business digital twins provide decision-makers with a systemic and dynamic view of the organisation. This enables data-driven decision-making, as leaders can test different scenarios and understand the outcomes *before* implementing changes. For new initiatives and entrepreneurial organisations, this can be invaluable in steering in the right direction.

2. **Risk Reduction:** By simulating various business scenarios, digital twins help identify potential risks and challenges in advance. This proactive approach allows businesses to mitigate risks effectively and develop contingency plans, ultimately reducing the impact of unforeseen events.



**3. Efficiency Enhancement:** Optimisation is a key benefit of digital twins. They help businesses fine-tune their operations by identifying inefficiencies and bottlenecks. This can lead to cost savings, increased productivity, and better resource allocation.



**4. Innovation Facilitation:** Digital twins encourage innovation by providing a safe environment to experiment with new ideas and strategies. Businesses can test innovative concepts without risking their real-world operations, fostering a culture of innovative improvement.

**5. Customer-Centricity:** Business digital twins can incorporate customer data and feedback, allowing companies to tailor their products and services to meet customer needs better. This customer-centric approach can lead to increased customer satisfaction and loyalty.

**6. Sustainability:** Sustainability is becoming increasingly important in business. Digital twins can help organisations analyse their environmental impact and identify opportunities for reducing carbon footprints and resource consumption.

**7. Competitive Advantage:** Companies that adopt business digital twins early gain a competitive edge. They can respond more swiftly to market changes, adapt to customer demands, and outmanoeuvre competitors still relying on traditional approaches

## Challenges and Considerations

While the potential benefits of business digital twins are immense, there are challenges to consider. Complexity in a business digital twin obscures understanding and undermines the purpose of creating one. Data privacy and security, the potential complexity of implementation, and the need for skilled assistance are among the hurdles organisations may face. It's essential to carefully plan and execute digital twin initiatives to maximise their value.

Despite these hurdles, relatively simple business digital twins can be created quickly and cheaply, delivering enhanced understanding and harmonised thinking in the leadership team. If the situation warrants it, further sophistication such as real-time data feeds can be added to increase utility.



In conclusion, business digital twins represent a significant evolution in how organisations operate and make decisions. They offer a holistic view of business processes, enable data-driven decision-making, and provide a competitive edge in an ever-changing business landscape.

Digital Twins as applied to cities, engines, spacecraft etc. are now well understood and applications in business processes are growing fast but twinning a whole business is still novel. A business twin is best kept as simple as possible and used as an “artefact” to further understanding and debate amongst leaders of an enterprise.

In other words, a Business Twin can be used as a tool to enhance decision-making and a guide to more effective collective action. Ironically, It should be a very human exercise, rather than a technical one.

If you would like to discuss the idea further in the context of your organisation, please get in touch and we can set up a Zoom call.

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