



# Digital Twin

DIGITAL TRANSFORMATION REALIZED

## Company Profile



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“The price of light is less than the cost of darkness.”

Arthur C Nielson



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# Unlock the value of data through digital transformation.

The Digital Twin Mission Statement

## Vision

Challenge and disrupt classic controls and asset management methodologies through application of IoT/ IIoT<sup>1</sup> hardware and SaaS<sup>2</sup>. Our deep understanding of process control coupled with rapid deployment facilitated by in house research, development and manufacturing is the enabler to supplying turnkey solutions.

Our solutions bring data out of the darkness into the light. To quote Arthur C Nielson, "*The price of light is less than the cost of darkness.*"

## Company Profile

### What we do

Sherlock Holmes once said, "*It is a capital mistake to theorize before one has data*". **We get that data** – in fact we "unlock the value of data" as per our Mission Statement.

The quality and relevance of data is important - *Real world problem solving can only be effective if real world data is captured*<sup>3</sup> - This requires hardware and processing that matches the measured variable to a meaningful data set. Our hardware sits at the edge of the real world and is generally referred to as an "Edge Device". We manufacture a range of these devices matched to each application.

To ensure rapid universal adoption, open standards have been published which are at the core of Digital Twins product development<sup>4</sup>. Using the building blocks of "open standards" our products and services bring together *legacy and edge*<sup>5</sup> data into a common cloud-based data set that represents an organisational process. Our model is modular or tiered, allowing for entry at any point on the data value chain providing pricing options based on end user requirements and skills.

In short - *What we do* is to capture quality edge-based data that is relevant to a process then present the data using industry standard methods to a cloud based database. We then provide the tools to manage, mix, dashboard and analyse the data.

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<sup>1</sup> Internet of Things / Industrial Internet of Things

<sup>2</sup> Software as a Service

<sup>3</sup> Ivan Potter quotes this to embody Digital Twins Edge capabilities of transducing real-world variables into cloud-based data.

<sup>4</sup> Open standards promote interoperability between products/systems allowing multiple vendors to manufacture products. This results in rapid adoption of technology and availability of skills leading to end user choice of both vendor, engineer and on-going maintenance facilitator.

<sup>5</sup> Legacy data refers to existing data in the organisation or process. Edge data refers to new data collected from real world devices using edge devices.

The table below expands on our Tiered model.

Tier1	Tier2	Tier3	Tier4
IoT Edge Device	Connectivity and MQTT Broker	Management Dashboard / Console (SaaS)	Advanced Services
Range of IoT hardware with edge processing selected to match the application.	Connectivity 2G/3G/4G/LTE/802.11  Transport USSD/HTTP[Rest])  Application MQTT	Digital Twin multi-tenant management console. Configure your own dashboard with custom look and feel. Customer logo's with drag and drop widgets provides full web dashboarding.	Customized visualization. Interfacing to ERP/CRM or other systems. Advanced data wrangling and machine learning.

## Applications

Wherever data is required in the cloud – whether this be Industrial Process, Building Management Systems, Cold Chain monitoring, Vehicle and Asset Tracking, Biometric verification for Banking, Electronic Contracts or Security, Machine Condition Reporting, Cell Tower Management of Inverters, Generators and Security Alarming, Alarm Management of Fire Panels...and the list goes on – Digital Twin can assist in harvesting the data.

The Litmus test - *“Does my organisation want to take advantage of the benefits of IoT and the capabilities of a common data platform for my processes ?”* – If there is a YES in the answer then Digital Twin can assist.

## Data Costs and Footprint

Harvesting data is a costly exercise when the asset is not connected to a wireless network and even more costly when gathered on cellular networks across borders. Digital Twin has solved this by employing several Tier2 connectivity options<sup>6</sup> one of which enables global connectivity in over 200 countries. Data costs have reduced, enabling monitoring and control of low-cost assets globally.

## Edge Devices, Legacy Data and Security

Edge devices provide a bridge between the real world and the cloud – as an example – To monitor temperature in a fridge or beverage cooler and trigger a high temperature alarm, an edge device is required to get the temperature from the fridge into the cloud database. The same applies to a generator or chiller that is not connected to a BMS<sup>7</sup>.

Legacy data exists where there is a system in place to measure/monitor/control – this implies the system data resides in a database or data table in situ. To provide access at cloud level requires application of standard methods such as MQTT<sup>8</sup>.

Data security is an integral part of cloud-based data. Data encryption (hardware and software), certification, user access rights and other techniques and standards are applied to ensure data security. Digital Twin adheres to international standards to ensure data integrity based on the organisational requirements.

<sup>6</sup> Digital Twin is a partner of Thingstream - an innovative global IoT connectivity network provider.

<sup>7</sup> Building Management System

<sup>8</sup> Message Queuing Telemetry Transport



## Route to Market

Digital Twin is a “business to business” business. We provide consulting services, technical skills, hardware and SaaS to planning and designing an organisations digital migration strategy. These products and services are provided in collaboration with the client and their implementation partners. Our offering includes consulting and system design, Tier1 hardware development, Tier2 connectivity options, Tier3 Management Console and dashboarding as well as Tier4 Advanced services such as integration into SAP.

We provide consulting services, technical skills, hardware and SaaS to planning and designing an organisations digital migration strategy.

## Credentials

### Management Team

Digital Twin's management team has accumulated over 60 years' experience in various supporting fields that have led to 4IR<sup>9</sup> and IoT. Richard Creighton brings a deep interest in Industry 4 and digital transformation - experience includes regional director of a Global 100 technology company. Anton Torlutter is a seasoned business executive with experience across manufacturing, mining, construction, oil and gas, and retail. Ivan Potter has passion for Automation and Control with a keen eye for identifying new opportunities. Ivan's track record in developing businesses with strong engineering capabilities spans 2 decades.

### Engineering and Production Team

An important Digital Twin differentiator is our speed to market enabled by owning the Research and Development (R&D) plus production life cycles. Our R&D Team includes 4 full time BSC electronic engineers and web developers. Our Production Team manufacture using the latest CNC Pick and Place and Reflow soldering equipment followed up by quality Control and packaging.

### Associated Businesses

Digital Twin is a member of i4 Group – A group of independently operated companies focused on the supply of products, training and technical support to automation, control and related companies.

More detail on each company is available on the i4 group website ([www.i4group.co.za](http://www.i4group.co.za)).

### Tell me more

Digital Twin's website [www.digitaltwin.digital](http://www.digitaltwin.digital) provides more detail. Any application specific information or clarification on particular subjects is available by sending an email to [info@DigitalTwin.digital](mailto:info@DigitalTwin.digital)

### Parting Thought

The importance of an organisations digital migration strategy is wrapped in a quote from Pierre Nanterme, CEO of Accenture - "Digital is the main reason just over half of the companies on the Fortune 500 have disappeared since the year 2000."

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<sup>9</sup> 4<sup>TH</sup> Industrial Revolution