



CYNTECH

HOLISTIC ENGINEERING SOLUTIONS

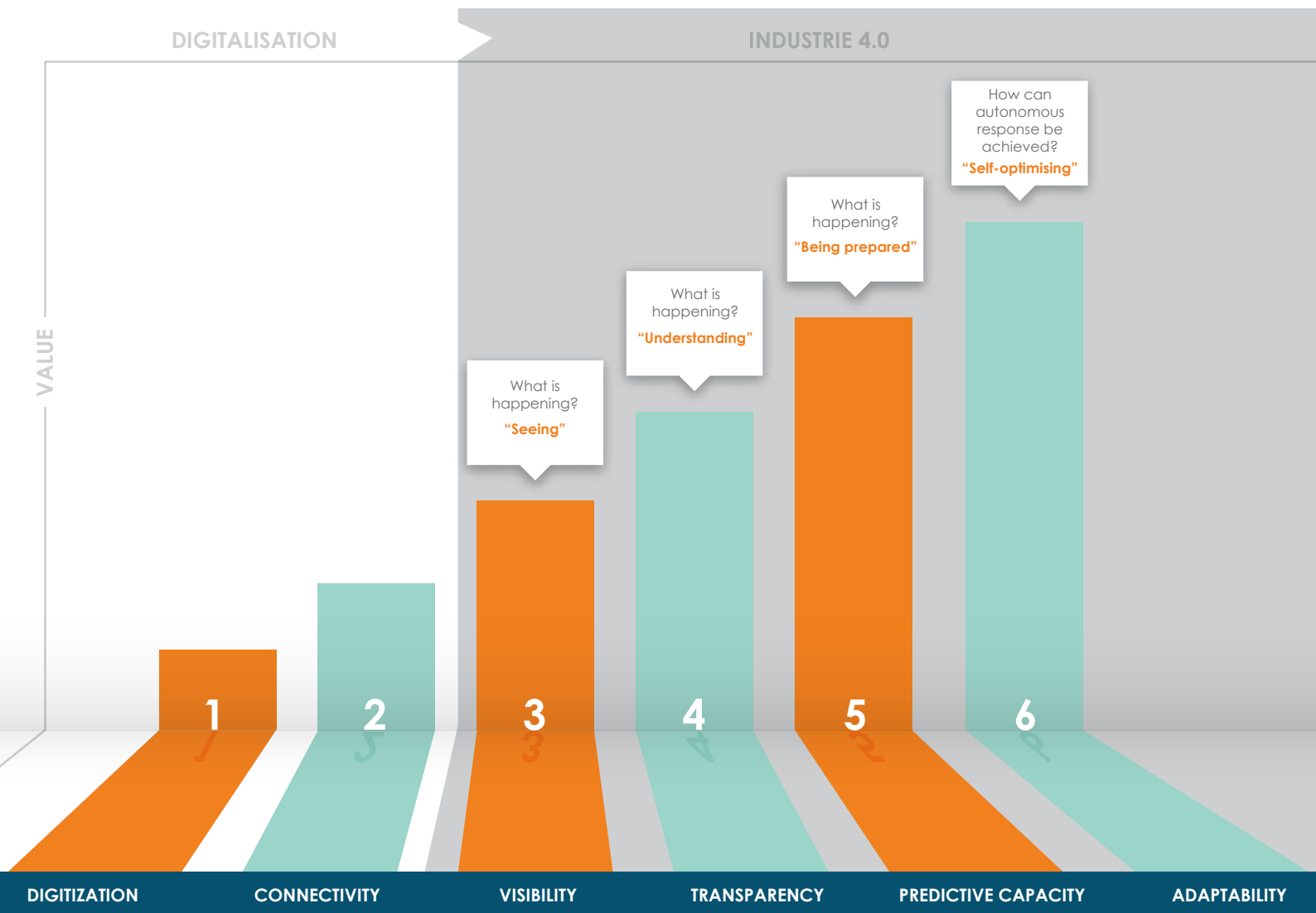


# CYNTECH & IIoT SOLUTIONS



# DIGITALISATION AND IIoT SYSTEM

Digitalisation and the road towards a value-adding IIoT system is a journey. As the journey progresses, business value and potential are unlocked. At Cyntech, we guide our clients through the digitalisation process into Industry 4.0. This process is best explained in the image below.





The journey starts with an analysis that determines what kind of information a business needs in order to improve business processes and optimise their value chain. The outcome of this initial report is pivotal in that it defines the overarching objectives of the digitalisation process and what is expected at the end of the road.


**In Step 1**, and in conjunction with plant operators and our clients' engineers, Cyntech strategically assesses plant processes and identify the areas that need to be computerised in order to be aligned with the final deliverable.

**In Step 2**, we connect the digital equipment to an IIoT cloud via a secure gateway and ensure that select data can be transmitted safely.

Between **Step 3 to Step 6**, one starts to see how data correlates with other data in the cloud, how it can be represented in a user-friendly visual way and how to graphically explain the relationship between newly discovered processes. Understanding correlation and causation in plant processes, in ways that have only been imagined before, can unlock doors to possibilities of reducing risk and improving process efficiencies.

 **Cause and effect analysis** that is built on accurate data allows investigation teams to easily identify root causes of incidents with pin-point accuracy and paves the way for the effective mitigation of future incidents through the implementation of successful policies, which reduce the time it takes for an organisation to achieve the ultimate goal of zero incidents.

 In addition to the above, and as the journey continues, predictive models can be implemented to give **early warning notifications**, which allows other machines in a system to adapt and compensate when needed. This will ensure plant continuity prior to any incident actually taking place.

 At Cyntech, we have engaged with the global leader and digital pioneer Siemens and their powerful MindSphere IIoT platform in a digital synthesis. This allows us to best guide our clients through their journey with the peace of mind that they have the best technology at their disposal and our team of specialists on their side.





# Specifically designed to help organisations optimise their offerings

**Cyntech, in collaboration with Siemens, gives you access to a whole new world of applications through MindSphere.**

Cyntech's trusted expertise in the Industrial Internet of Things (IIoT) combined with Siemens' legacy of technological excellence will help you tap into more benefits than ever before thanks to the cloud-based platform MindSphere.

Enter Industry 4.0 with streamlined designs, integrated systems and optimised analytics.

MindSphere is a **cloud-based open ecosystem** platform developed by Siemens. The platform is specifically designed to help organisations optimise their offerings and increase value by connecting assets through IIoT.

MindSphere enables you to convert the maximum amount of raw data into usable information that will help you increase operational efficiency and build new IIoT-centred business models.

Through MindSphere and Cyntech's collaborative implementation of IIoT, Original Equipment Manufacturers (OEMs) can now develop new designs to specification for your needs. OEMs will be **able to identify and predict** possible performance shortcomings and improve asset operations through an enhanced design process.

MindSphere is a Platform as a Service (PaaS) that affords Cyntech's team of digital analysts the opportunity to interrogate and understand how an organisation's business value drivers can be optimised through effective IIoT implementation. The Cyntech team is then able to strategically determine how raw data can be converted into valuable and relevant cohesive business information. This information equips management with real-time knowledge that allows them to make quick and effective decisions, placing their organisation ahead of their competitors.

# ADD VALUE TO YOUR BUSINESS WITH MINDSPHERE & CYNTECH



## Plant Availability

- Reduce system downtime
- Increase physical infrastructure efficiency
- Early warning notifications
- Proactively improve plant uptime.



## Enable & Manage

- Digitise field processes
- Lower IT costs
- Increase operational efficiency
- Sweat assets effectively



## Plant Reliability

- Reduce unscheduled downtime & be forewarned
- Track and reduce service costs
- Eliminate over-maintenance
- Improve worker safety and prevent injuries
- Improve effectiveness and reliability of plant equipment
- Early warning notifications, prior to system failure
- Improve overall plant confidence and mitigate unforeseen events.



## Be in control of equipment lifecycle costs and expenditure



### Optimise, Automate & Predict

- Increase accuracy and reliability of industrial process
- Increase asset utilization and lower field labour costs
- Monitor, optimise and ultimately lower energy costs
- Increase efficiency and integrity of safety systems



### Improve Bottom Line

- Be in control of equipment lifecycle costs and expenditure
- Reduce Opex spending
- Cut unnecessary Capex
- Increase customer satisfaction and retention
- Improve efficiency of business operations



## Streamlined Supply Chain

Operational visibility and enhanced automation ensure optimal production and redistribution. Fewer supply chain errors allow you to minimise inventory, adhere to timelines and reduce costs.



## Plant Reliability

Through continuous monitoring and improved preventative measures, your plant will be able to retain productivity by avoiding unforeseen downtime, ensuring maximum profit and loss prevention.



## Innovative Designs

Through first principle analysis, performance optimisation is reached and the implementation of novel solutions moulded specifically to each system and circumstance's requirements becomes possible.



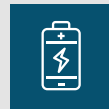
## Reduced Risks

Through maximum visibility of production and predictive diagnostics, plant safety is optimised and operational risks reduced. Through root-cause insights, preventative measures can be taken in time.



## Lower Costs

Through the implementation of predictive maintenance, improved operational effectiveness, increased asset performance/utilisation and optimised business models, costs can be minimised organisation-wide.



## Energy Usage

Compressed air and energy systems optimisation, as well as the implementation of predictive maintenance which reduce energy usage and costs, can only be achieved through a root-cause approach and continuous systems analysis.



## Optimised Performance

By connecting assets, creating a connected production chain, and sending information directly to technicians and management, processes and production are able to reach maximum potential, through proactive responses to early warnings on potentially compromised assets.



## Supervisory Plant Monitoring

The digitalisation process will allow key stakeholders to analyse plant processes in real time while also accessing historical data that will help determine future requirements to ensure ongoing development.



**Cyntech is a consulting engineering firm with headquarters based in Cape Town, South Africa**

With a service offering that extends throughout sub-Saharan Africa. We provide extensive expertise in professional engineering, advisory, project management, system integration and IIoT services for the petrochemical, building and urban development industries. Our expertise ensures that projects are executed with competence stemming from our foundation of collaboration, problem-solving and innovation.

**For more information about Cyntech and how Siemens' MindSphere can benefit your organisation, please contact:**

**Ashley Verhulp:**  
+27 83 375 1245  
ashley@cyntech.co.za

**Willem de Villiers:**  
+27 83 455 5787  
willem@cyntech.co.za