

The road to Unified Manufacturing

Event Digital
Transformation

28 September 2023



Agenda



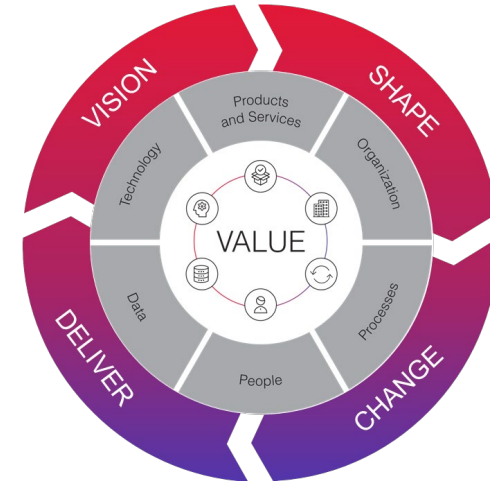
Voice of our Clients

Trends in Manufacturing



Unified Manufacturing

Vision

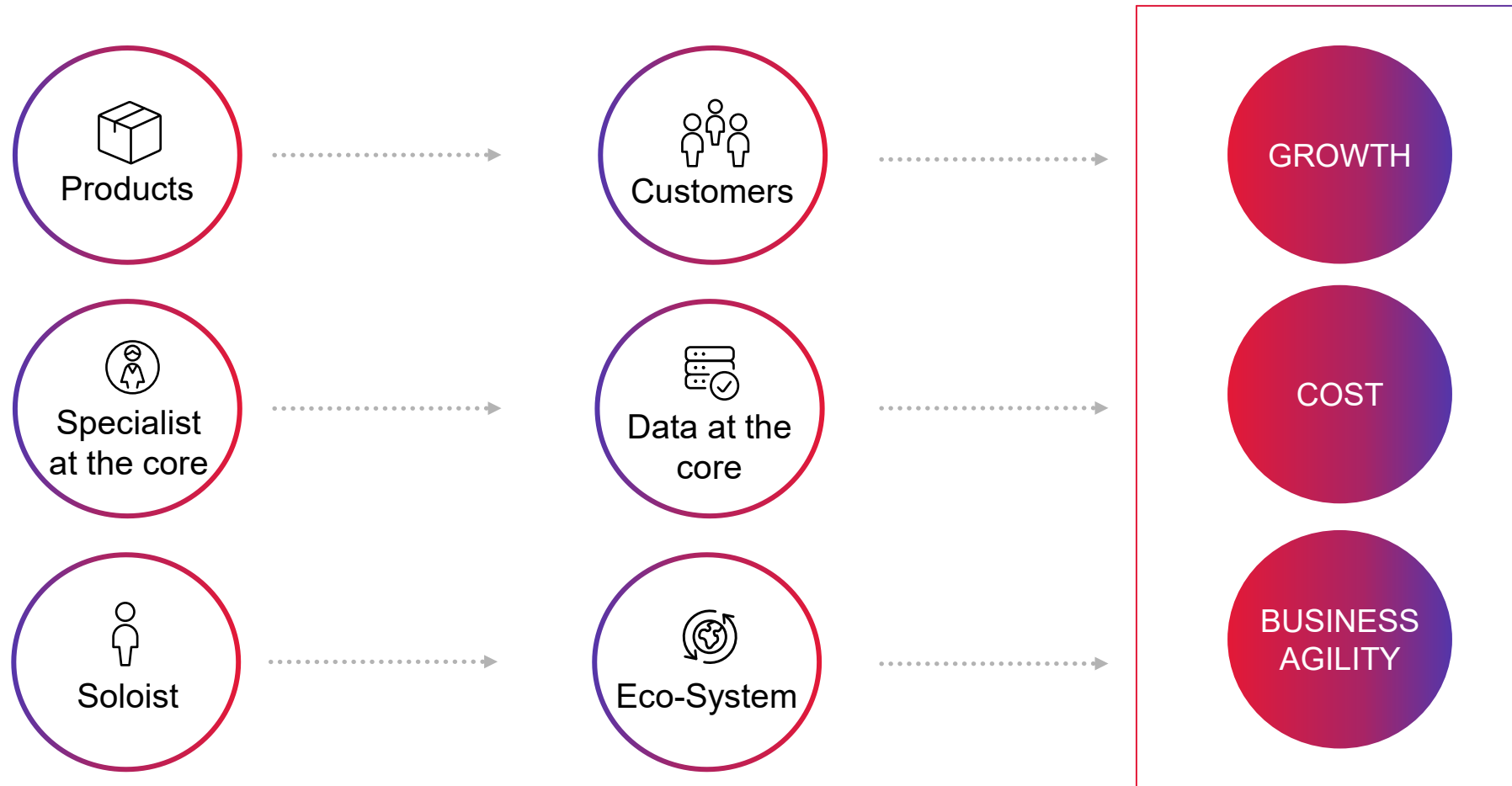


Manufacturing Atlas

Approach

What our clients say about the future of manufacturing

Manufacturing is changing



Impact of macro trends rises, especially for climate and world order

Most impactful: Client rating of 8+, with 10 as 'very high degree of impact on the organization'



Macrotrends being felt hard by clients

- ✓ **Economic slowdown:** *"Increased energy prices are having a big impact, while a potential recession is affecting investment decisions."*
- ✓ **Decarbonization and ESG:** *"Carbon neutrality and demands by customers to be an eco-friendly and sustainable company."*
- ✓ **Focus on security:** *"IT security has become the most important issue in 2023 with a lot of high attention activities."*
- ✓ **Technology acceleration:** New forms of artificial intelligence are advancing.



Top industry trends by impact

▲ Increased ▼ Decreased — No change + New

Manufacturing overall

Year-over-year evolution

- Sustainability
- ▲ Protecting the enterprise through cybersecurity
- ▼ Becoming digital organizations to meet customer expectations
- ▲ Increasing investments in new products and services to accelerate growth
- ▼ Digitization for data integration extending across the full value chain



Top business priorities by importance

▲ Increased ▼ Decreased — No change + New

Manufacturing overall

Year-over-year evolution

- Optimize operations
- ▲ Develop and deliver new services
- ▲ Protect the organization
- ▼ Improve the customer experience
- Deliver product innovations and enable greater personalization



Top business priorities by importance: Commercial vs. Natural Resources

▲ Increased ▼ Decreased — No change + New

Commercial Goods	Natural Resources
— Optimize operations	— Sustainability
— Develop and deliver new services	— Optimize operations
— Improve the customer experience	— Protect the organization
▲ Protect the organization	— Improve the customer experience
▼ Deliver product innovations and enable greater personalization	▼ Deliver product innovations and enable greater personalization

Top IT priorities by importance

▲ Increased ▼ Decreased — No change + New






Manufacturing overall

Year-over-year evolution

- ▲ Protect through cybersecurity
- ▼ Drive IT modernization of applications
- Digitize processes and integrate systems to reduce operational costs, improve agility
- Data analytics capabilities
- Drive IT modernization of the infrastructure



Recommendations for executives to advance their priorities

-  **1 Go back to basics: review your IT and shopfloor landscape for resilience**
Ensure your system landscape is slim and slick for agility, speed to market and cost reduction
-  **2 Get your data ready: the manufacturer of tomorrow is data-driven**
Know your resources and inform plans with real-time information
-  **3 Build flexible supply chains to be ready for production demand**
Reconfigure and re-evaluate your supplier landscape to maximize value creation
-  **4 Be open to collaboration with industry platforms**
Prepare for industry convergence, customer-centricity and evolved working patterns
-  **5 Stay focused on both IT and OT security**
Ensure it allows for data sharing and data protection

Unified Manufacturing

Evolving business objectives

Continued focus on Industry 4.0 objectives



Build up resilience

Improve Business Continuity; rapid response to disruptions.



Become more agile

Respond faster to changes in external circumstances, to always perform in the best possible way.



Increase efficiency

Become more granular in tuning the performance of production, maintenance, and supply chain to maximize cost effectiveness.

Move towards Industry 5.0 initiatives



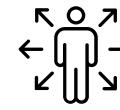
Sustainability

Manufacturing driven by sustainability objectives. Reduced carbon footprint. Sustainable supply chains. Circular economy. In support of local communities and bio-diversity.



Human Awareness

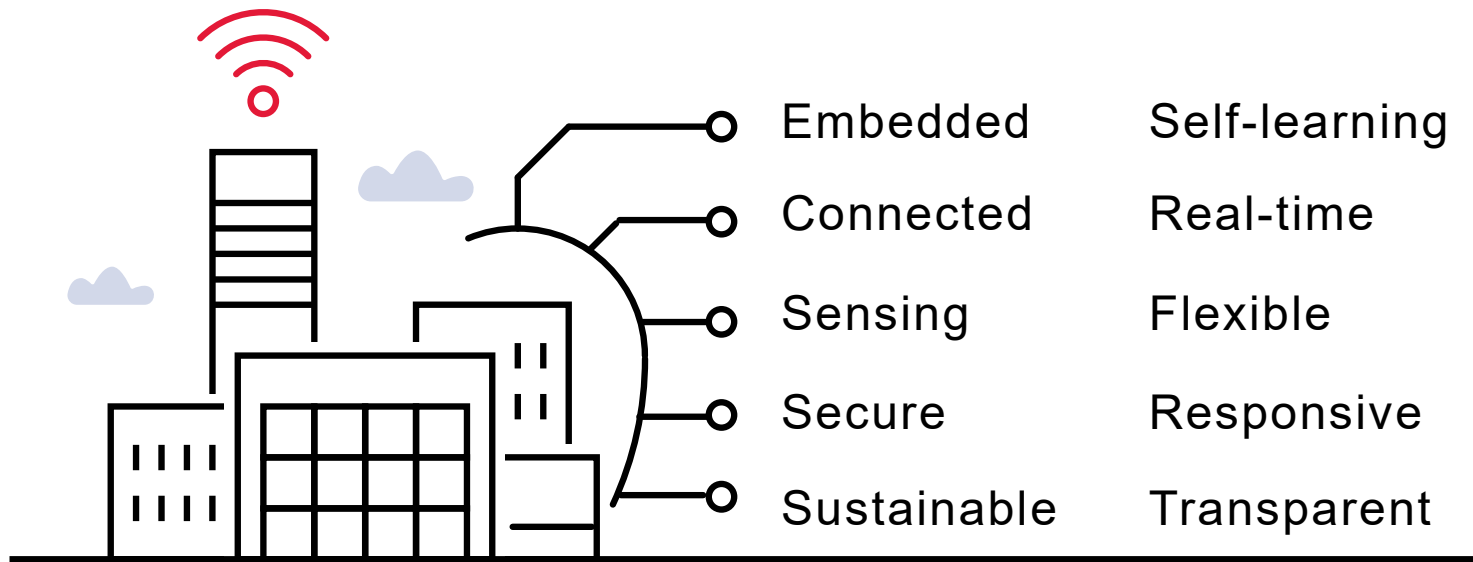
Responsible AI, harmonious human/machine relations; ensuring worker well-being, AI in-support of humanity.



Hyper Personalization

Having a clear view of each unique customer's experience and needs. More personal and customized products and services.

What is a Unified Factory?

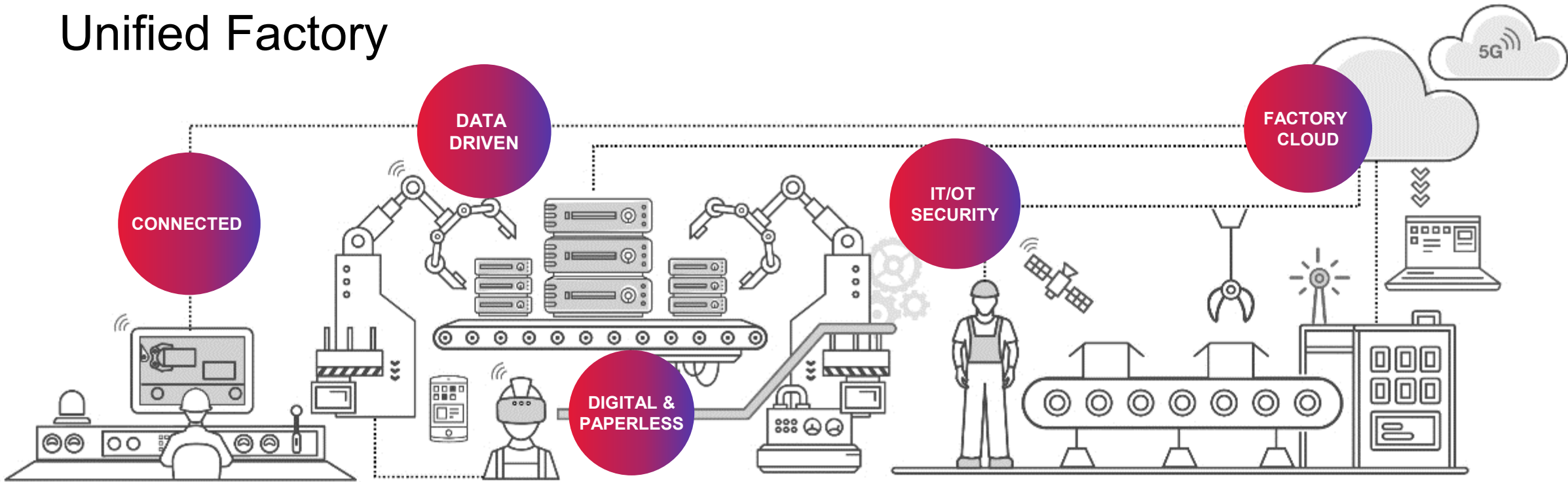


Unifying people, processes, machines
and technology

A Unified Factory is an intelligent digitally connected plant that:

- ✓ Interfaces with the worker and wider ecosystem
- ✓ Applies and integrates the latest in advanced technology to optimize and enhance operations
- ✓ Strives for Industry 5.0 and sustainability objectives

Unified Factory



ENABLED BY TECHNOLOGY



Cloud Computing



Wireless Networks



Internet of Things



Advanced Robotics



Drones



Mobile Devices



Augmented Reality



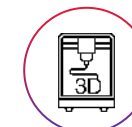
Big Data Analytics



Cyber Security

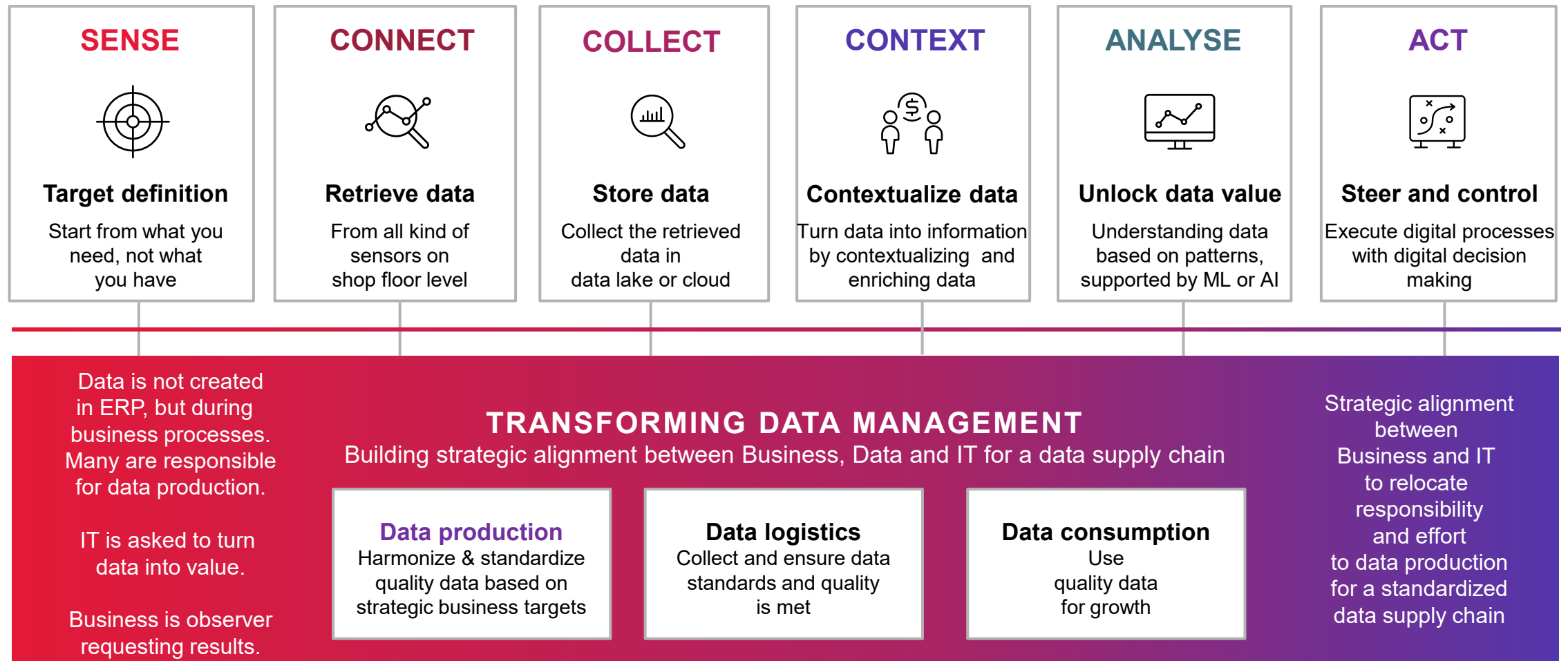


AGV's

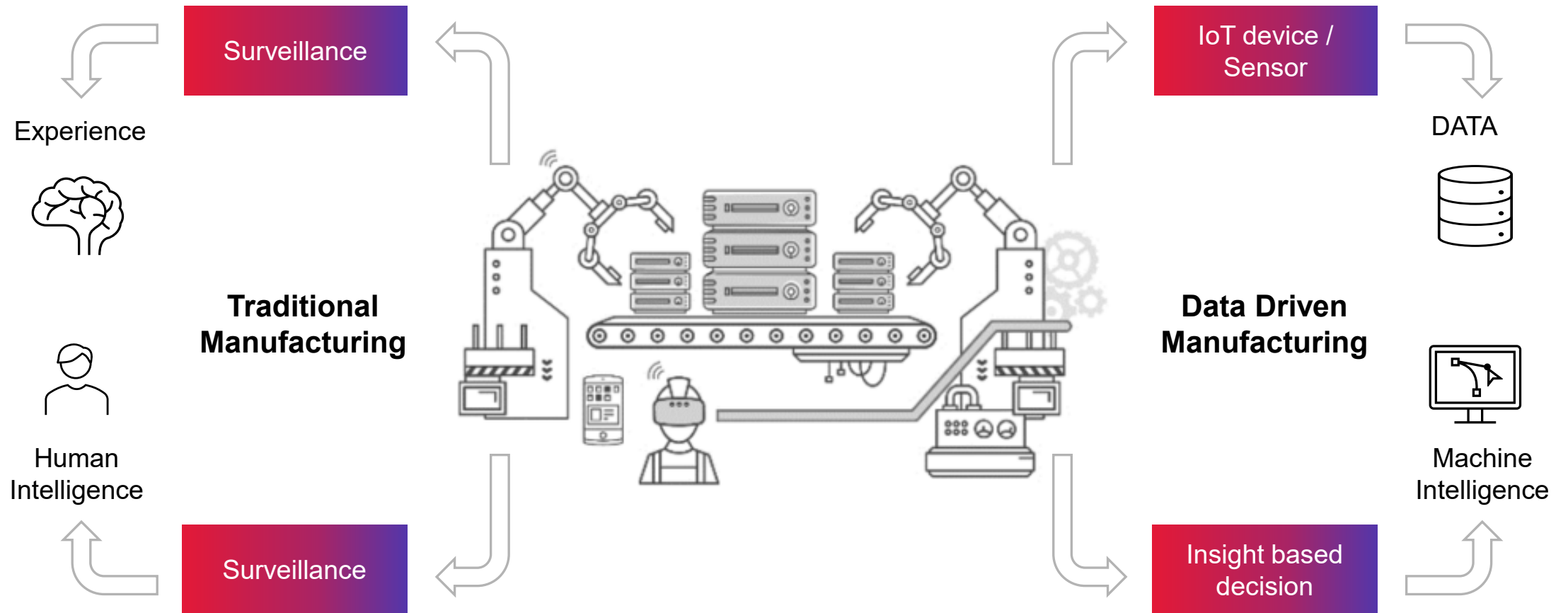


3D Printing

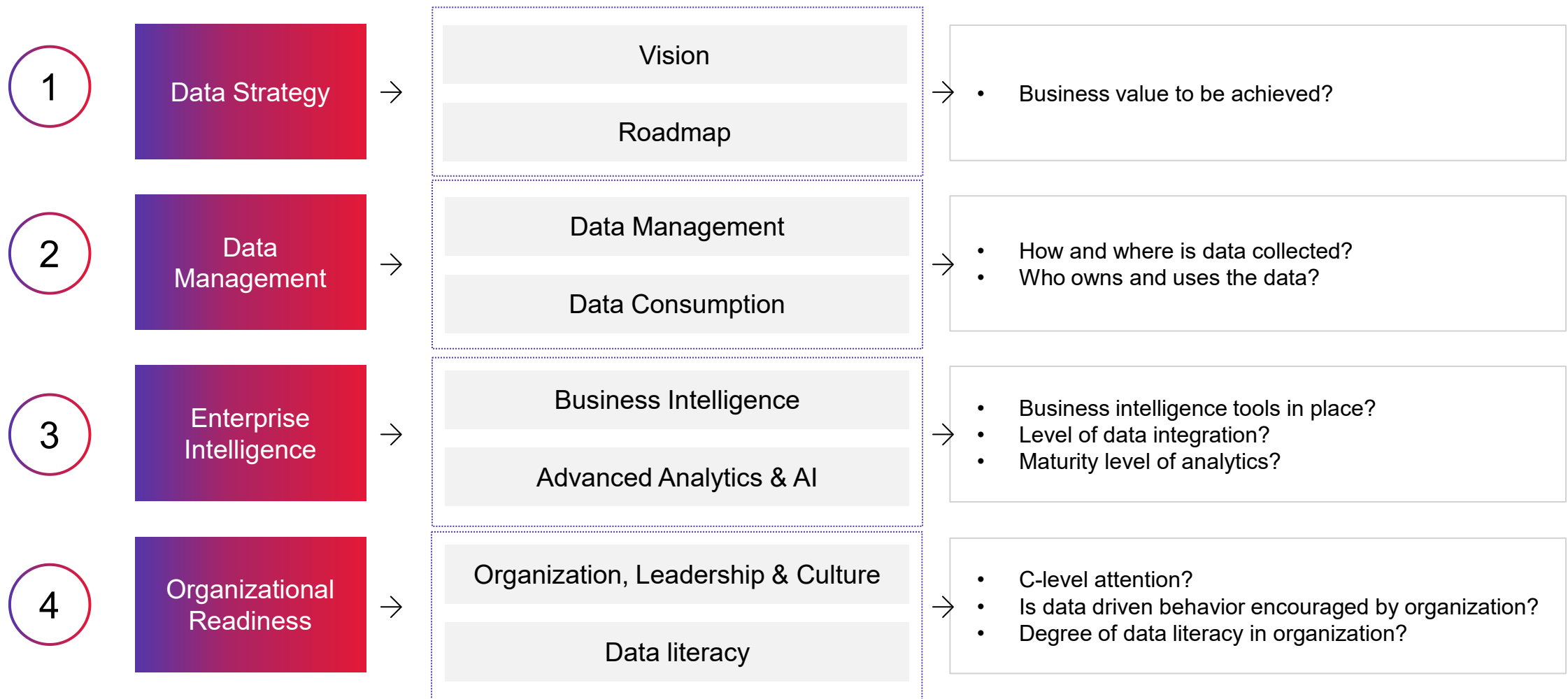
How to unlock the value of your data to drive the Unified Factory towards digital autonomy



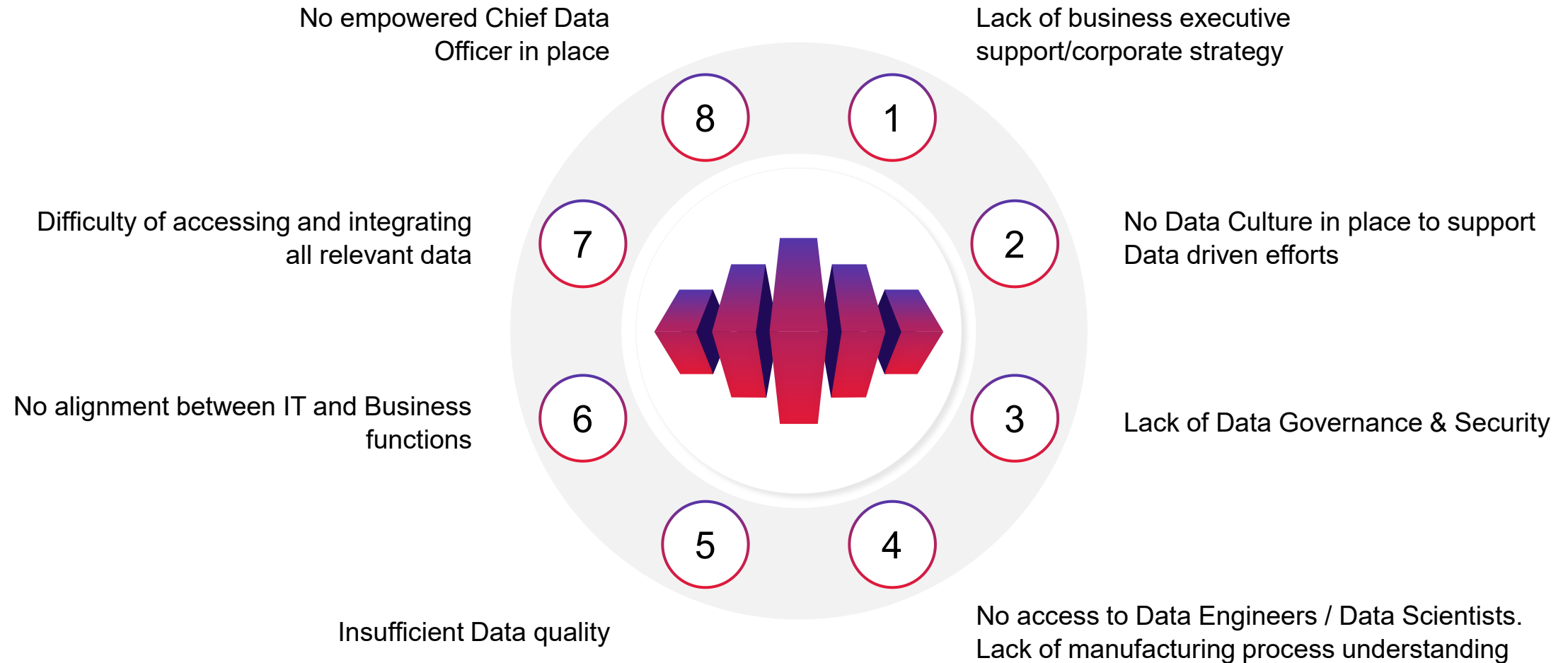
Traditional Manufacturing vs. Data Driven Manufacturing



Our vision for becoming truly data driven

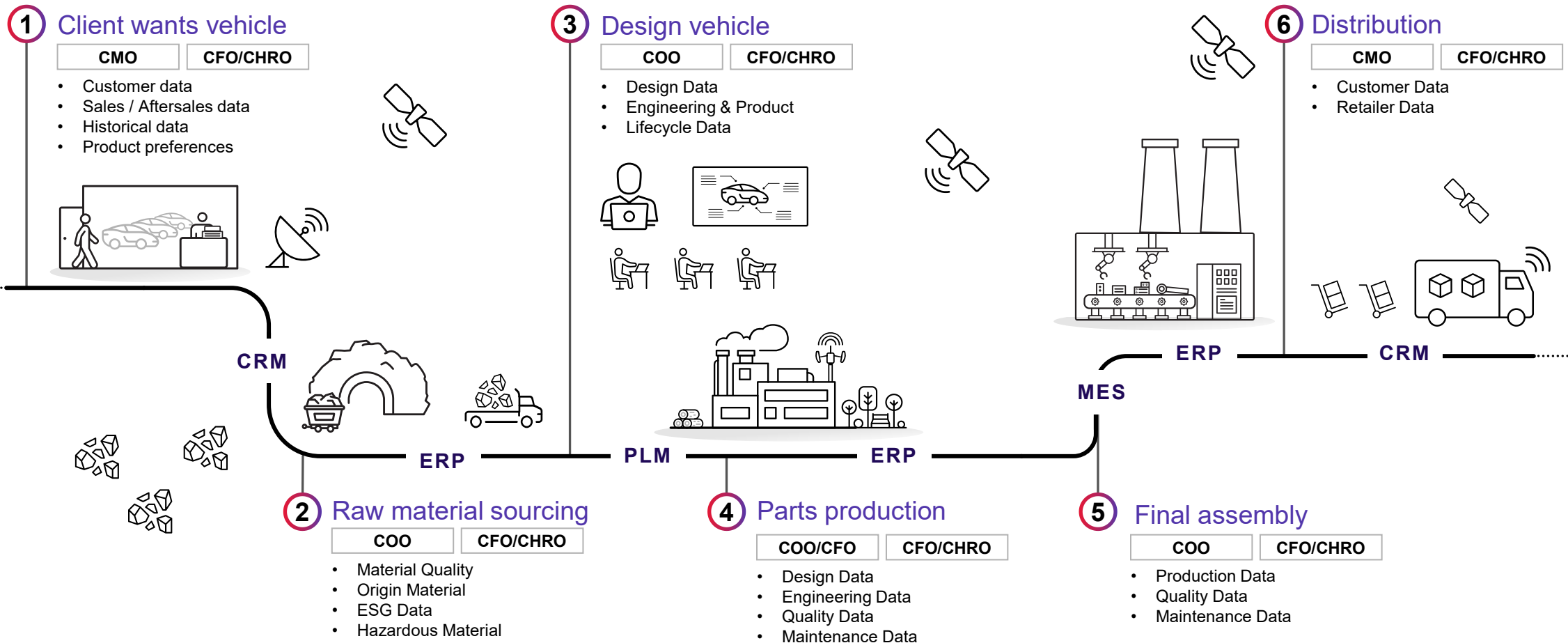


Challenges for achieving data driven manufacturing



Managing Data Complexity

Example Automotive Manufacturing



Manufacturing Atlas

Moving to a Unified Factory is not without challenge

Lack of Clarity

on priorities and strategy taking the entire value chain into account

Traditional culture

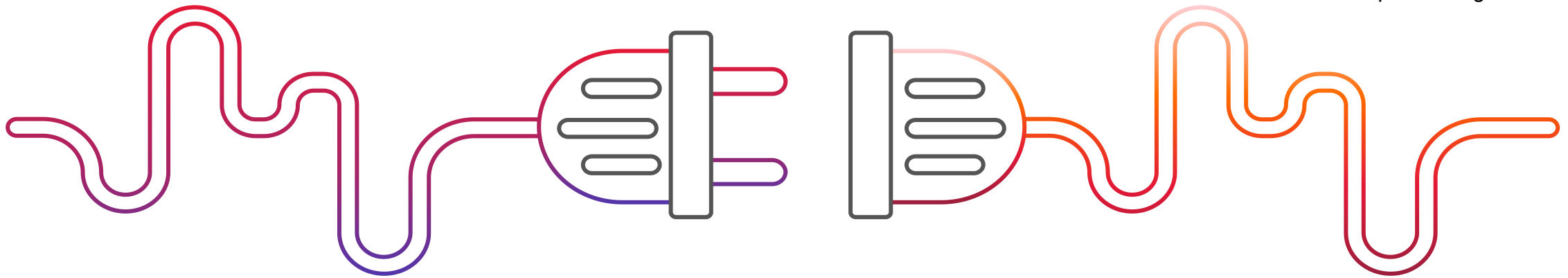
creates barrier to change, lack of alignment between IT and OT

Aging workforce

results in knowledge drain, lack of skilled staff and Industry 4.0 expertise

Aged assets

lacking (I)IoT technology; solutions are often 'wired' while network is not reliable enough for real-time processing



Hesitancy

in moving towards cloud or 'opening' up business as new technologies introduce new security risks

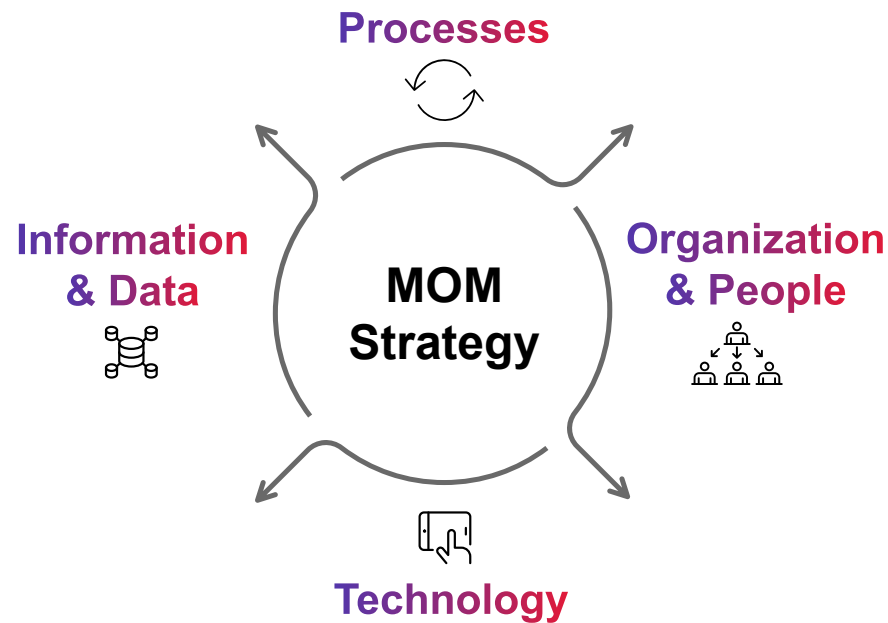
Existing legacy systems

hindering the required agility and time-to-market

Having data

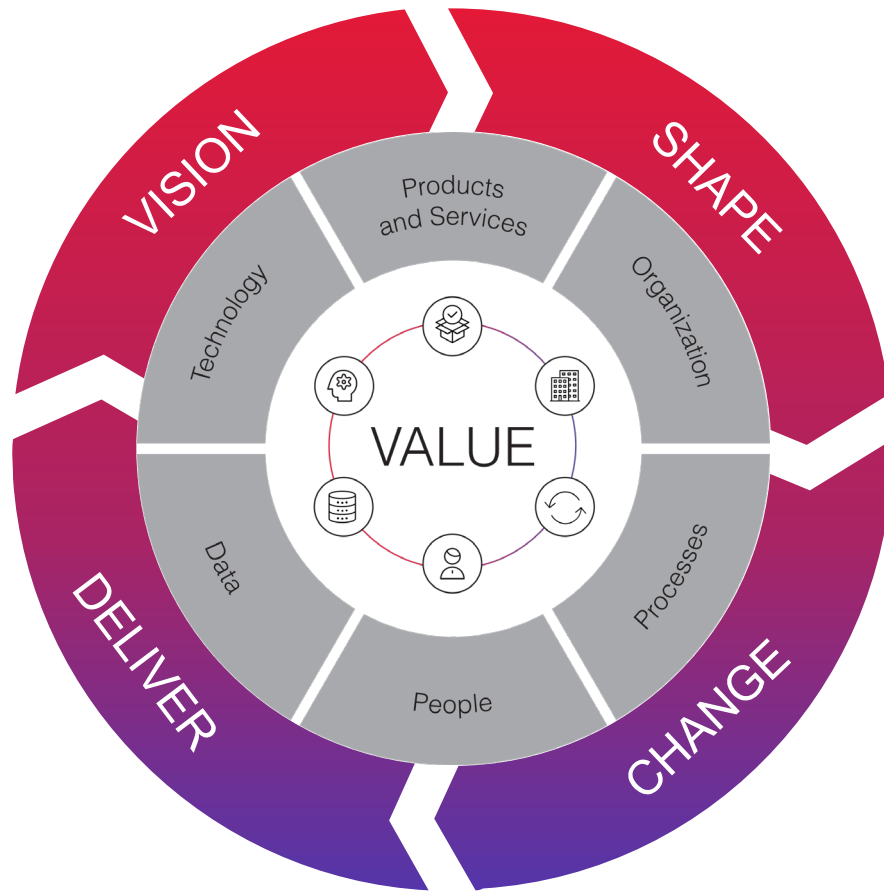
is not good enough, having right data is key. Inconsistent data types and lack of 'meaning'

Key questions to ask



- Are all parts of business on board and included in the strategy?
- Does my strategy take into account the complete set of processes?
- What data am I including, how am I sourcing and understanding it?
- What technology will I employ, what knowledge and expertise do I have access to and what is missing?
- Is my organisation at the right maturity level in all 4 core areas?

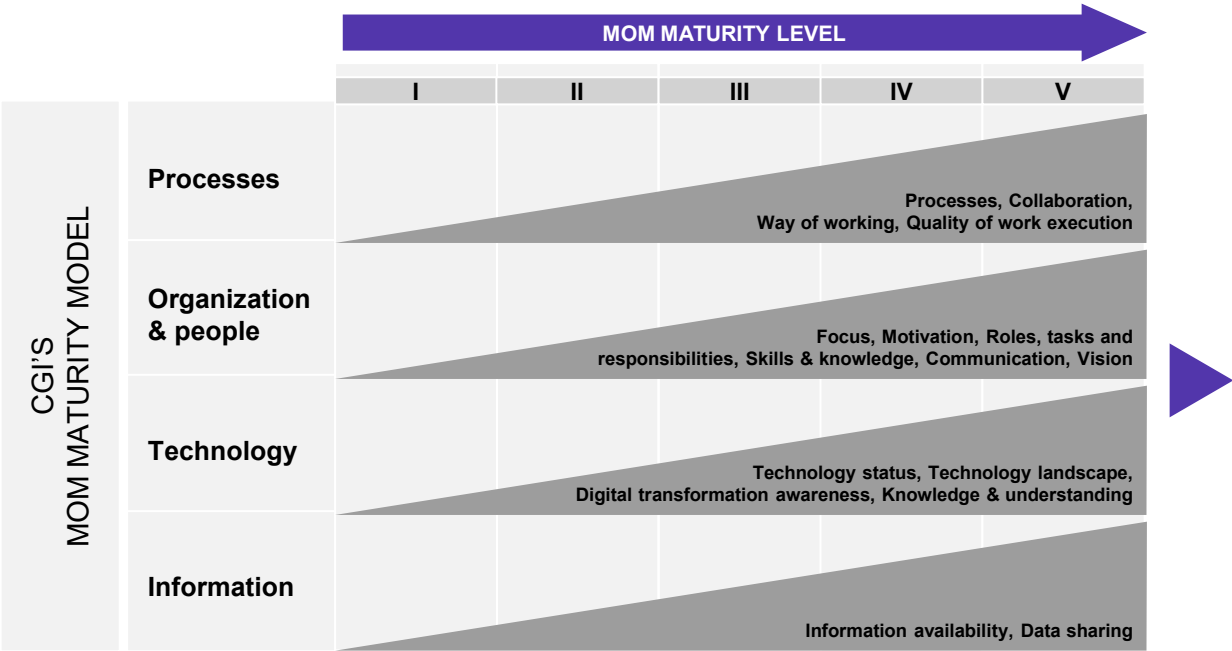
Manufacturing Atlas, CGI's proven digital manufacturing framework to transform to an Unified Factory



- ✓ Holistic methodology and framework for transforming manufacturing environments.
- ✓ Comprehensive assessment of current landscape
- ✓ Brings clarity to priorities, strategy and challenges
- ✓ Provides a structured approach to move from strategy to detailed design and roadmap
- ✓ Incorporates best practices systematically through our MOM Maturity Model
- ✓ Takes the whole business into account, not just IT
- ✓ After 'Vision' you can scale to any scope or pace you prefer

Digital transformation is a unique journey for every client

Maintenance performance improvement requires optimization in a balanced way of the aspects:
Processes, **O**rganization, **T**echnology and **I**nformation (POTI)



POTI aspects	Level I	Level II	Level III	Level IV	Level V
Process	No processes defined	Some processes defined	Critical processes defined	Most processes defined	All processes defined
Organization	No or single departmental focus	Cross-departmental focus	Plant or local focus	Value chain focus	Eco-system focus
Technology	No tooling	Inefficient tooling	Efficient stand alone tooling	Integral tooling	Embedded digital transformation
Information	No or unreliable information	Some reliable information	Reliable data, shared locally	Reliable data, shared across sites	Reliable data, shared across value chain

CGI ATLAS HELPS YOU TO UNDERSTAND WHERE YOU ARE; AND WHERE YOU WANT TO GO

Recommendations for executives to advance their priorities

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