

Manufacturing Atlas

A proven framework to
reinvent manufacturing
operations



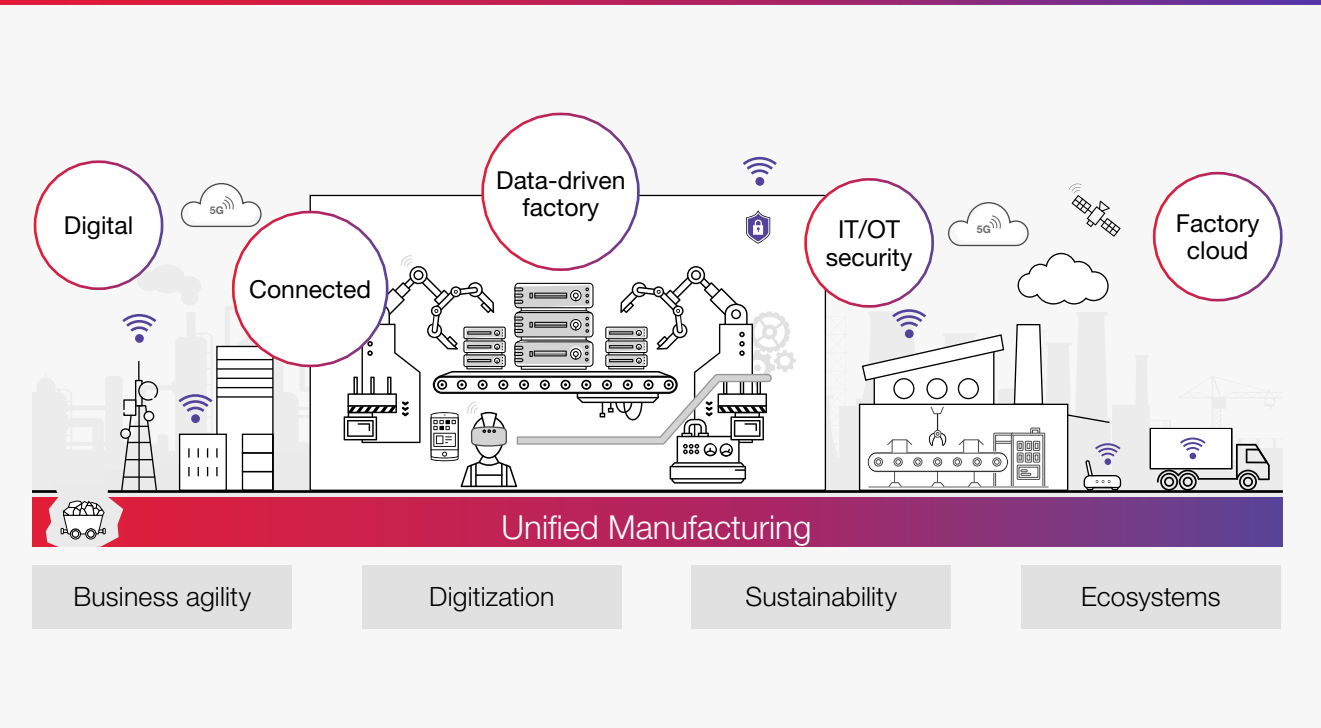
Rethinking manufacturing operations

A manufacturing plant is a complex and fast-paced environment, and running a super-efficient plant is the ultimate goal of every manufacturer.

However, manufacturing is at a turning point. The industry is poised to become increasingly automated, with intelligent analytics at its core. Hyper-personalization will drive production lines, and cognitive computing will hasten innovation. In addition, collaborative ecosystems will allow manufacturers to be far more responsive to customers, offering innovative services and sustainable products in a circular economy. At the same time, Industry 5.0 is imminent.

It calls for putting people and the environment back into the equation and ensuring that man and machine work together to support a digital, green future.

Unified Manufacturing is our vision for the future of manufacturing. It incorporates five critical building blocks that enable manufacturers to realize their strategic vision and business goals through intelligent digital connections.



Introducing Manufacturing Atlas



To optimize performance, you need to know what's happening in every part of the plant and across your supply chains so that the right people and systems can access the right information to make the best possible decisions faster.

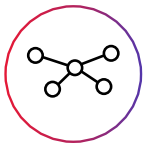
Smart technologies like the Internet of Things (IoT), big data analytics, smart wireless sensors, automation and cloud can now be smoothly and securely integrated with existing process controls, manufacturing operations and resource planning systems to provide data continuity across traditional silos and throughout the ecosystem. In addition, innovations in digital twins and augmented reality offer new ways to optimize maintenance, reduce costs and improve products.

Manufacturers that implement these technologies can accelerate digitization across the value chain to become agile, customer-centric organizations through efficient internal and external collaboration facilitated by data. In doing so, they can create new revenue streams and reduce costs while positioning themselves as market innovators.

The future is full of possibilities for manufacturers; however, effectively optimizing and transforming manufacturing operations, supply chains and supporting information systems requires well-thought-out modifications and effective implementation.

CGI's Manufacturing Atlas is the first step in this transformation journey. Its proven framework enables deep digital connection, integration of IT and OT, and the application of proven business methodologies to help manufacturers successfully transform their businesses while minimizing business risks.

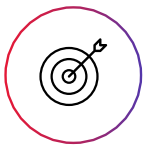
Key features of Manufacturing Atlas



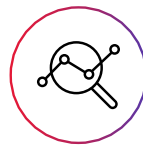
Systematically incorporates best practices through our MOM maturity model



Transforms manufacturing environments using a holistic methodology and framework



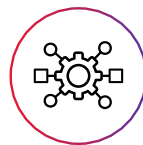
Brings clarity to priorities, strategy, risks and challenges



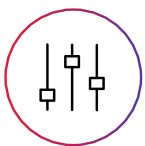
Provides a comprehensive assessment of the current landscape



Takes the complete business into account, not just IT



Delivers a structured approach to move from strategy to roadmap and detailed design



Flexibility to scale to any scope or pace



Supports regulatory operations and ensures compliance



The need for a holistic approach

Evolving your manufacturing processes and operations in a unified way is exciting, but knowing where to start can be overwhelming and is not without challenges. Some real-life scenarios include:

- Identifying numerous potential automation areas, but ambiguity about the way forward
- Having multiple divisions, each with separate goals and challenges, requiring harmonized solutions
- Implementing a single ERP solution that needs to be integrated and harmonized across different plants
- Overcoming “choice overwhelm” when looking to modernize legacy systems and implement Industry 4.0 technologies

Many manufacturers seek clarity when it comes to next steps and support in transforming the latest innovations and buzzwords into real-life practical actions. Moreover, organizational challenges such as a boardroom-shop floor disconnect, aging workforces and legacy systems continue to hinder progress. And while advancements in technology continue, the right assets or access to the right expertise is often missing. As a traditionally slower-to-transform industry, there also is hesitancy to embrace this new world.

Lack of clarity

on priorities and strategy that takes the entire value chain into account

Choice overwhelm

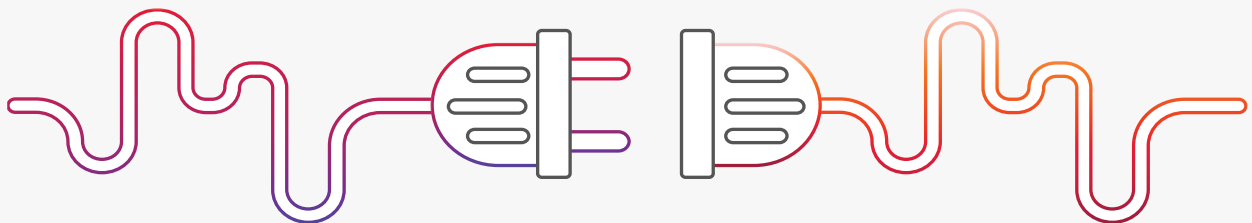
related to solutions, technologies, initiatives and providers

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 the network is not reliable enough for real-time processing



Hesitancy

in moving toward cloud or “opening up” the business as new technologies introduce new security risks

Traditional culture

creates barrier to change and impedes alignment between IT and OT

Having data integrity

is not good enough, having the right data is key. Challenges include inconsistent data types, lack of “meaning” and data integrity

To ensure a smooth transition, your transformation program needs to focus on four core areas. Understanding your maturity in each of these areas and where you want to get to is critical.

Some key question to ask include:

- Are all parts of business on board and included in the strategy?
- Does my strategy consider 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 organization at the right maturity level in all four core areas?
- Is my organization aware of data integrity principles of attributable, legible, contemporaneous, original, and accurate (ALCOA)?

Manufacturing Atlas is a holistic methodology and digital framework that addresses each of these four core areas to help you optimize your manufacturing IT, drive operational excellence and allow greater personalization.

It delivers expertise, best practices and solutions to support your transformation in an agile manner—from completing an initial feasibility study and making an investment decision to rolling out solutions and delivering ongoing improvements.



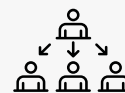
Processes

- Harmonized across all plants
- Faster sharing of best practices
- Quick roll-out of successful pilots



Information & Data

- Company-wide data availability
- Clear ownership
- Reliable quality and easy access
- Documented and contextualized



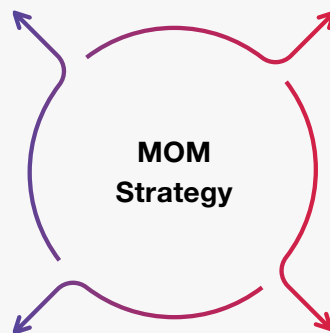
Organization & People

- More centralized governance
- People aware and trained
- Central capability to facilitate innovation



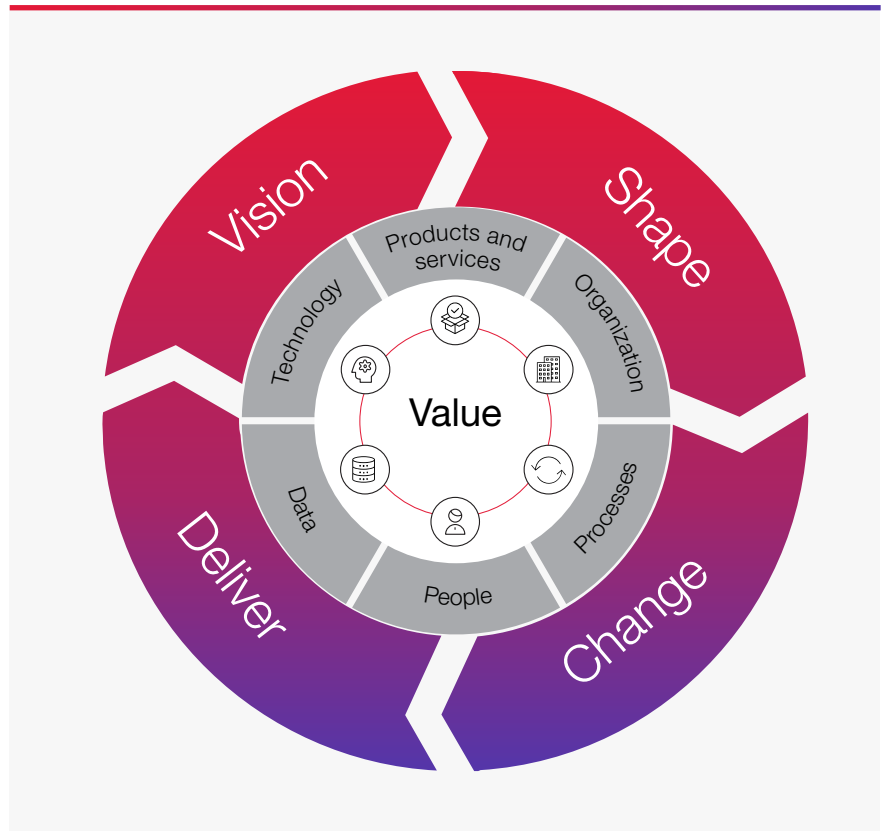
Technology

- Harmonized over all sites
- Cloud based where it adds value
- Horizontally and vertically integrated



A step-by-step approach

CGI's Manufacturing Atlas offers a proven and integrated step-by-step approach to improve efficiency, reduce costs and gain the competitive advantages of Industry 4.0.



1. Vision

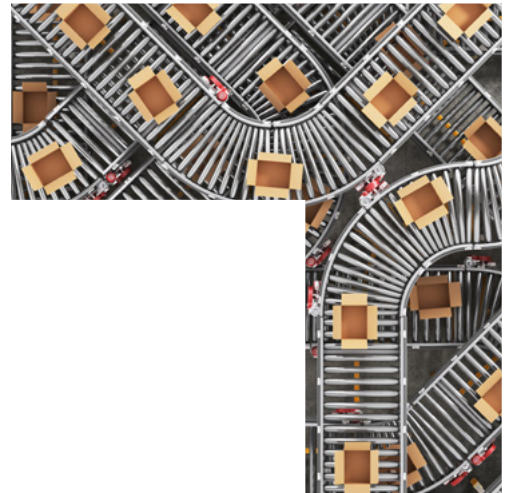
We work with you to build your MOM vision and program based on tangible outcomes to discover your improvement potential. This includes:

- Identifying desired business benefits
- Setting program goals and objectives aligned with the MOM vision
- Applying methodology based on CGI best practices and global standards like APQC, SCOR and ISA-95
- Supporting your investment request for the next phase

2. Shape

With a clear vision in place, our experts collaborate with you to develop a blueprint of your current and future architecture (including business and technology) and help build a solid business case. This includes:

- Performing a comprehensive digital MOM maturity assessment
- Developing a digital MOM architecture landscape
- Building a detailed roadmap that incorporates best practices systematically through our MOM maturity model, global standards and governance structure
- Assessing risks and regulatory requirements
- Carrying out benefit planning to define the projects to be executed
- Developing individual project plans and business cases



3. Change

In this stage, we support the successful implementation and ensure adoption using a proven approach for multi-site roll-out, which maximizes synergies between central and local preparation and delivers an MOM template that is easy to maintain. This includes:

- Delivering benefits visibility through a KPI template and dashboards
- Building capabilities to realize your desired MOM maturity level
- Developing comprehensive technology solutions such as MES, LIMS, PM and PLM
- Harmonizing processes where it brings the most value
- Compiling a comprehensive digital MOM solution architecture
- Receiving support from local CGI teams that build trusted, in-person relationships and ensure accountability for delivering success

4. Deliver

Our delivery approach focuses on benefit realization by implementing your bespoke MOM templates for an easy transition. We also support you in continuously optimizing and evolving your manufacturing environments to achieve your strategic goals. This includes:

- Benefits KPI template and dashboards
- Installing a process for monitoring, continuous improvement and optimization
- Providing ongoing maintenance and support
- Coaching, training and support
- Post transition management

Serving as your transformation partner

Digital transformation is a journey unique to each manufacturer. CGI's Manufacturing Atlas helps you understand where you are and enables you to get to where you want to go.

Our 7,000+ manufacturing specialists, including 2,800 supply chain experts, will work with you to drive optimization and innovation where ever you are in the world.

Partner ecosystem







About CGI

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world. We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

cgi.com/manufacturing

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