PROJECT BLESSED
Becoming a Lighthouse through
Exemplary Safety Systems & Excellence in Digitalization

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Operational efficiency and manufacturing excellence

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Manufacturing challenges have been rising in the last decade

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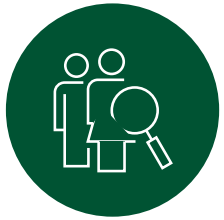
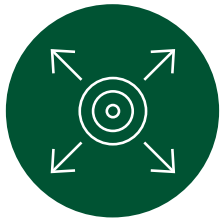
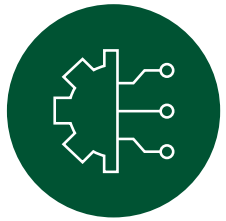


Mounting labor, energy and materials cost pressures demanding better efficiency



Traditional operational practices (e.g., Lean/Six Sigma) implemented but **driving gains only in isolated departments**



New technologies being piloted but **hard to sustain and adapt** to operational needs

Geopolitical tensions, **trade restrictions**, and **logistics disruptions** posing serious risks to continuity

Stringent environmental and societal impact objectives being reinforced

We have experienced 5 industrial revolutions transforming our way of working

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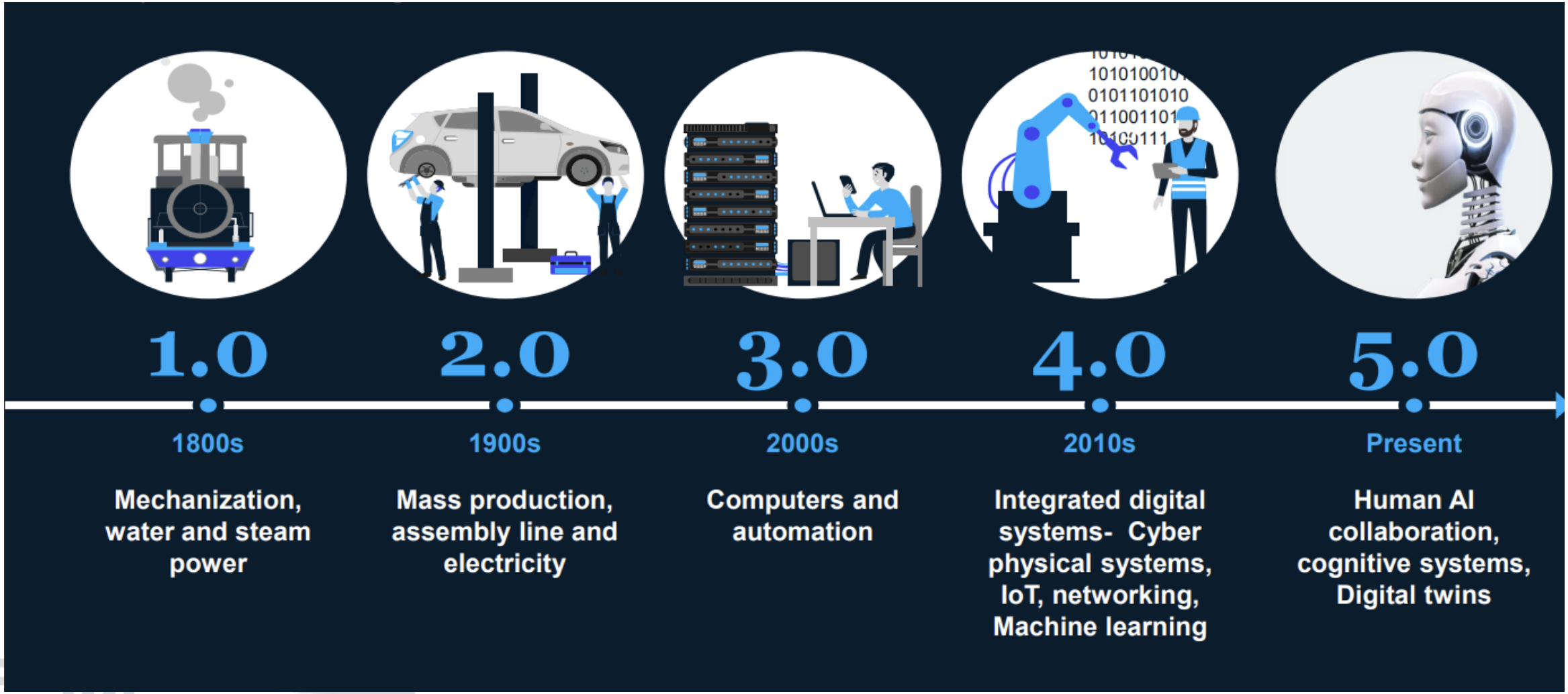

Staying ahead of the curve will require bringing together 5 tenets of next-gen manufacturing excellence

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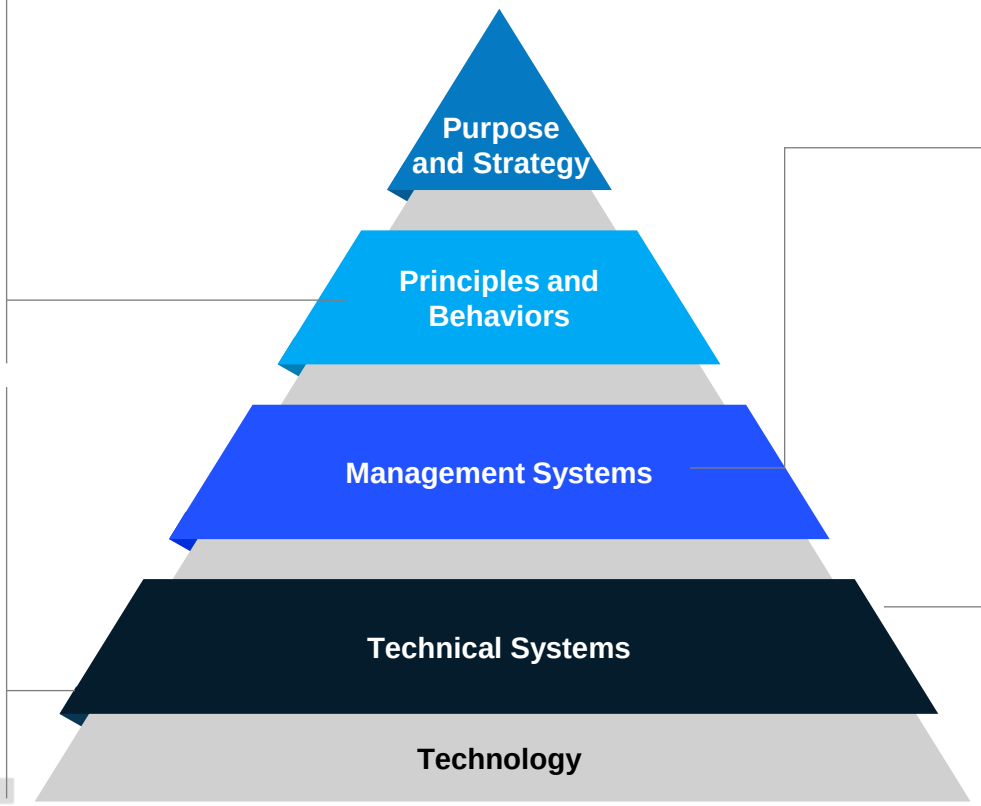
Purpose & Strategy

Set an ambitious, achievable vision and strategy for the organization

Mindsets & Behaviors

Embed a continuous improvement mentality / culture across the organization



Management Systems

Appropriate governance to measure impact in real time and enable timely and efficient decision making

Technology

Upskilled workforce, flexible working models, and technological enablement to streamline processes and increase efficiency

Technical Systems

Specific tools, methodologies, and techniques tailored to your organization, developing capabilities and capturing identified value

A well-established manufacturing excellence culture and help unlock…

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Holistic and sustainable impact reflected on the organizations' P&L

Y: Yield

Reduction in input raw material consumption variability for reduced costs

E.g: 2% improvement in chemical consumption

E: Energy

Effective usage of utilities for improved thermal and electrical efficiency

E.g: 3% improvement in steam consumption in evaporators

T: Throughput

Maximizing output by minimizing bottlenecks and downtime

E.g: Cycle time improvement of chlorine bottling

Q: Quality

Consistently meeting customer specifications; Reducing waste

E.g: 5ppb improvement in inlet brine quality

Robust organizational capabilities and a culture of collaboration and 'excellence' with empowered shop floor workers

Improved resilience and responsiveness to cater to changing market dynamics and supply chain disruptions

At DCM , we are undergoing a holistic transformation in our quest for manufacturing excellence..

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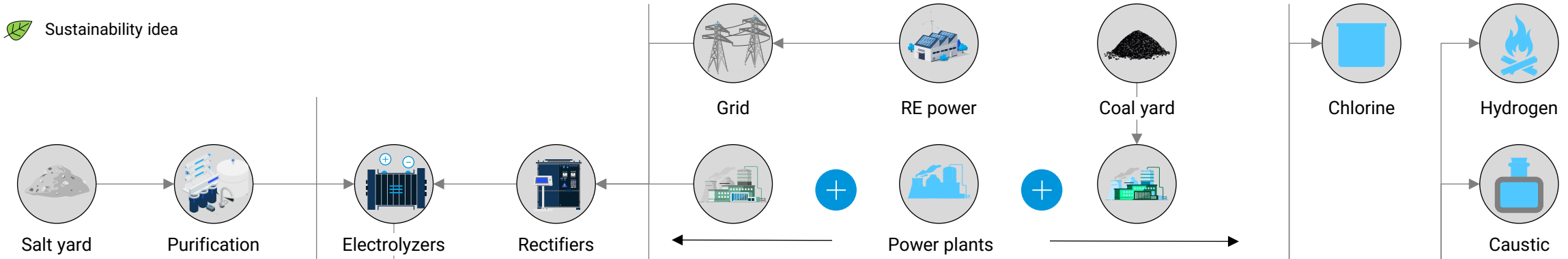
Sustainability idea



Upstream

1. Salt quality optimization
2. Just-in-time inventory management
3. Chemical dosage optimization
4. Water consumption optimization
5. Inlet brine purity control (purified brine)

Electrolysis

6. Electrolyzer efficiency optimization
7. Predictive scheduling of remembraning
8. Membrane type optimization
9. Use of high efficiency rectifiers
10. Maintenance scheduling optimization
11. AA led root cause analysis of failures

Power generation

12. Electrolyzer production mix optimization
13. CPP auxiliary power consumption reduction
14. Cooling tower optimization
15. Advanced plant trip prediction
16. Predictive maintenance of boilers
17. Fuel mix optimization
18. Heat rate optimization
19. Unburnt carbon reduction
20. O2 percentage in flue gas optimization
21. Intelligent soot blowing

Downstream

22. Process auxiliary power consumption reduction
23. Evaporator efficiency improvement

Others

24. Workforce optimization
25. SCM cost optimization

Non-exhaustive set of ideas

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…and have witnessed success on multiple fronts

Use case	Description	Impact achieved
Boiler efficiency improvement	Optimization of boiler operating parameters to improve heat rate and unlock higher boiler efficiencies	2-3% *reduction in coal consumption*
Power mix optimization	Creation of an optimization engine to incorporate power and operational constraints and dynamically minimize total cost of power	1-2% *reduction in power costs*
Fuel mix optimization	Bringing together procurement and power plant operations to identifying the optimal coal blend for reduction in net cost of power	1-2% *reduction in coal costs*
Steam consumption reduction	Reduction in specific steam consumption at evaporator units through line modifications	5-10% *reduction in specific steam consumption*
Rectifier efficiency imporvement	Identification of optimum firing angle for improved rectifier efficiency	~0.3-0.5% *improvement in rectifier efficiency*

What does a continuous transformation journey look like ?

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1 Measure

You can't improve what you can't see: Install systems for real-time measurement of all critical KPIs

2 Analyze

Identify gaps and/or variations in current operating performance; Benchmark against best-in-class

3 Identify

Identify gaps and/or variations in current operating performance; Benchmark against best-in-class

4 Design

Set internal targets and leverage internal/external expertise, shop floor ideas to design solutions to bridge the gaps

5 Execute

Implement quick wins at speed; Ensure adequate leadership focus and shop floor skill sets to deliver

6 Scale

Expand transformations at pilot site to broader network; Set up systems and processes to ensure sustenance

Key learnings from our journey so far…

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Transformation is a marathon, not a sprint

Success does not come overnight. There will be failures- we must learn from them

Critical mass is imperative to success

At least 30% of the workforce must be actively engaged to change the organization DNA

Leadership vision is the driving force

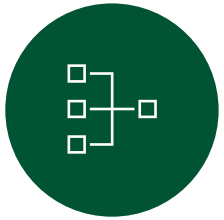
Senior leadership must role model the quest for excellence and create pull for improvement

Focus on value, not tasks

Operational excellence is not about being busy—it's about being effective- shift focus from tasks to results

Build people for the future organization

Investment in people capability is as important, if not more than investment in infrastructure



Adapt new ways of working

Systems, technology and processes should enable, not throttle the culture of excellence

Any questions ?