Case Study.
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Executing an operations excellence program

dss⁺ worked with a national integrated energy company with roots in the GCC. The company operates in more than 16 countries around the world and covers the entire value chain, from exploration and production to marketing and distribution of end-user products.

The company's refineries in the GCC, as well as the aromatics and polypropylene production plants, provide fuel, plastics and other petroleum products to the region and the world. dss⁺ partnered with the company to execute an Operations Excellence program through the installation of lean principles, which resulted in extensive value being unlocked across three of its sites. This resulted in improved visibility, real-time KPI visualisation, and data-driven decision making. dss⁺ was selected following their experience in deploying a similar program throughout its own facilities globally.

The Operations Excellence program aimed at improving performance by following a series of steps:

- **Full quantification of assets** through conducting a comprehensive diagnostic to identify and prioritise improvement opportunities.
- **Lean deployment framework creation** to support management in clarifying objectives, prioritising initiatives and developing an implementation approach to deploy the lean programme within the organisation.
- **Acceleration of financial and operational results** by supporting the organisation in implementing improvements with a 'hands on' approach at all levels in the organisation structure.
- **Adoption of performance and reporting management systems** that enables full integration of the improvement initiatives across the assets, seamless cascade of accountability and KPIs from management to the frontline, as well as rapid escalation of issues for resolution.
- **Reinforcement of continuous improvement culture** within the workforce and management team to ensure this becomes something that everyone does, rather than something that is outsourced to the experts. In addition, building capability by providing training and coaching on relevant tools and methods to accelerate and sustain the delivery of the improvement initiatives within the company.

The project was segmented into three workstreams, following a detailed diagnostic with the intention of identifying specific initiatives to capture value. This included operations (where most of the value was captured), maintenance and supply chain.

Three workstreams were developed to implement specific initiatives and capture maximum value.

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Diagnostic Phase
During the diagnostic phase, deployed over a period of two months, dss+ performed several activities:

1. Process mapping in operations, maintenance and supply chain (in excess of 5 key cross functional processes mapped and reviewed).
2. Structured interviews with selected stakeholders at different levels throughout the company.
3. Data mining and analysis (+ 15 studies completed to quantify performance gaps).
4. Management system review, in excess of 120 initiatives reviewed, performed several field visits in selected plants and implemented 2 visual management boards.
5. Workshop sessions (+- 30 workshops conducted) to highlight benefit impact, prioritisation, quantification, timing and agree on implementation plans.

Diagnostic phases

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Starts off with a number of hypotheses	Quantifies gaps in performance and execution	Identifies root causes of the gaps	Defines how much of the gaps can be impacted	Determines a financial and operational benefits case	Provides an implementation plan to realise financial and operational benefits
"We are innocent until proven guilty"	**"How far is it possible to go?"**	**"Why aren't we there yet?"**	**"How far is it feasible to go?"**	**"Show me the money!"**	**"This is how we will get there"**

Steering committee #2

Kick-off meeting

- 35 focus interviews
- 120 initiatives reviewed
- Field visits in SR1 and SR2
- 5 pre-identified themes as focus areas for next phase

Steering committee #1

- +30 workshops
- +5 cross-functional processes mapped and reviewed
- +15 studies completed to qualify performance gaps
- 2 Visual management boards implemented in selected sections as proof-of-concept

Steering committee #3

- Project milestone and plans
- Benefits estimation
- Governance and resourcing
- Critical success factors

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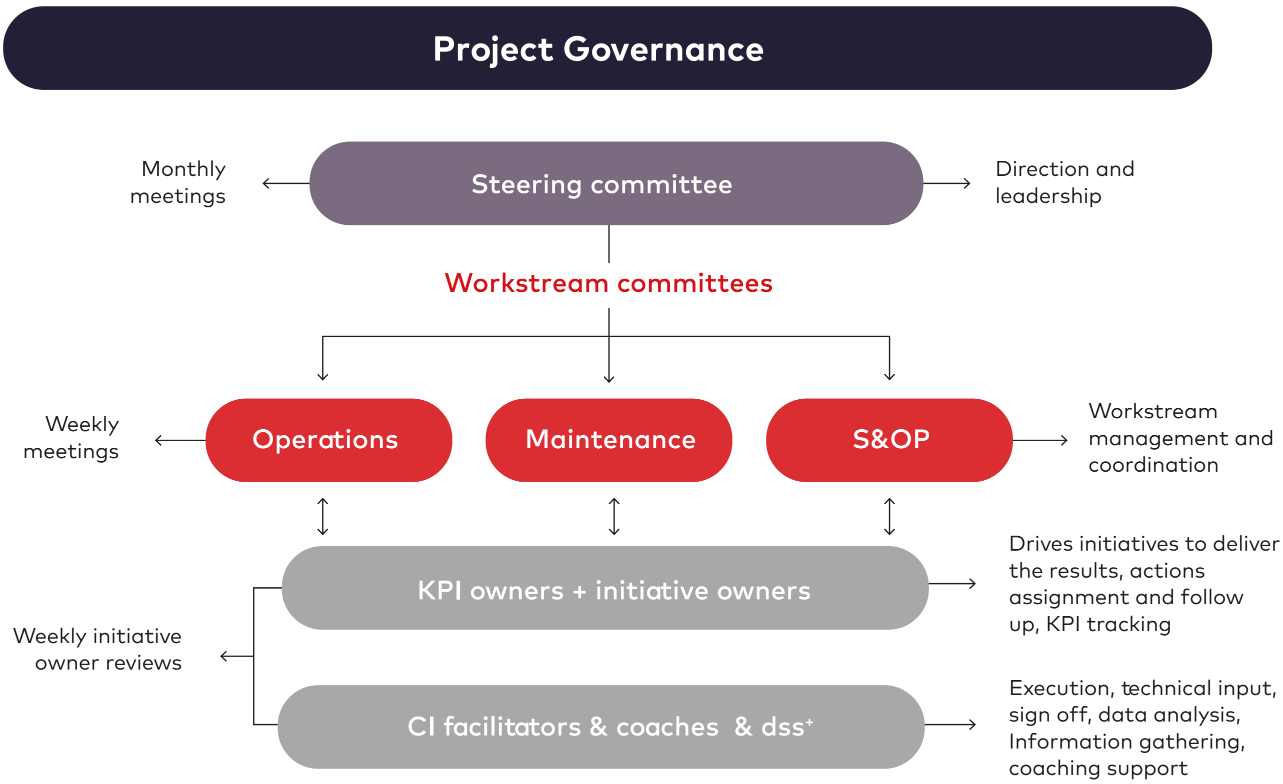
Petrochemicals.

At the end of the diagnostic phase, a target was set in terms of financial benefits available to the business. The target was agreed by all stakeholders as achievable during the first year. An ambitious target was set as a result of improvements in three main areas, namely:

1. Sales and operations planning (supply chain).
2. Operations (all refinery operations).
3. Maintenance (all sites).

Next, dss+ and the client defined and established a project governance structure. The Governance model helped drive transformation and achieve the program's objectives. A steering committee was designed to oversee the efforts being made across each workstream namely operations, maintenance and supply chain management.



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Through a foundation workshop the leadership was aligned on the Visible Felt Leadership™ methodology and conducted self-assessments. After an initial diagnostic, dss+ elevated area level risks to the leadership level and posed the following questions:

- What are the top risks and potential blind spots?
- Are these risks indicating common themes?
- What are the top concerns as a leadership team?
- How did the leadership team enable these risks through actions and inactions?

The risks helped leadership open their eyes to behaviours that may have contributed to increased risks in the field. dss+ worked jointly with the leadership team to align on a "commitment to change" that they would later share and engage the organisation with. Personal action plans were developed and through individual coaching sessions, dss+ developed the capabilities of the leadership and guided them to build, embed, and demonstrate changes in their mindset, behaviours and actions.

Implementation phase

Following the comprehensive diagnostic phase, dss+ was able to identify and prioritise improvement opportunities by setting up three workstreams:

1. Operations workstream

The company wanted to unlock further value from their operations, create efficiencies, and look for improvements that could be measured. dss+ assisted with a number of activities including setting up an accountability framework, developing KPIs from management to frontline and a rapid escalation process to resolve issues on a timely basis.

dss+ helped bring clarity and discipline to the lean transformation programme, where roles, responsibilities and accountabilities in terms of managing improvements were clearly defined. There was buy-in across the structure from leadership right through to the frontline. In addition, gaps in skills, basic lean training and coaching needs were identified and addressed with the support

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of the company's Continuous Improvement team. This helped set up the foundations of a company culture aimed at continuous improvement. Ultimately, the company's objectives were to establish an ongoing continuous improvement mindset in the organisation with the aim of always unlocking value in a structured way.

An improvement pipeline and stage gate process was implemented. This essentially helped to identify an idea, convert it into an initiative with tangible value (and measurable outcomes), include it on a tracker and assign this to a champion for each department. All initiatives are tracked on a dashboard and managed through the project governance structure to ensure improvements are tracked rigorously with clear outcomes.

One of the key initiatives under the operations workstream was the design and installation of a Production Loss Accounting tool (PLA). The PLA element of the programme, centered around the allocation of losses in the correct categories, gave dss+ actionable visibility into all forms of production loss. During the assessment phase, dss+ discovered that the losses were not necessarily being assigned to the correct categories or being fully allocated. For example, downtime losses were being associated with maintenance costs only, or loss quantifications only being performed during shutdowns and not slow downs. The PLA tool captured throughput into the different processes units in real time, performed the calculation and displayed the result immediately. PLA metrics, reports, and dashboards were then integrated across the Management Operations Systems (MOS) designed by dss+ to maximise value delivered. dss+ tools, systems and processes were developed and allowed the employees working in the refinery to see exactly what production losses were occurring across all plants, so that specific actions could be taken.

A big part of the success was also attributed to behavioural changes. For example, installing root cause analysis, cross-functional problem solving and focusing on financial impact with employees adopting the use of new techniques on a 'business as usual' basis.

2. Maintenance workstream

Following the diagnostic, dss+ and the client realised that their approach towards maintenance was too reactive – around 60% of person-hours per work order were being spent on corrective maintenance and not preventative maintenance, whilst typical best practice should be at 15% and 85%, respectively. The objective was to shift the focus towards creating an equipment ownership culture, to become more proactive and create a world-class maintenance program.

For maintenance, planning and scheduling were identified as key focus areas, which improved "bad actors" management and contractor management.

To get to the desired benchmark, dss+ helped implement a "look ahead planning and scheduling methodology" and identified initiatives as focus areas. This helped establish a planning and scheduling philosophy. The plan helped the client to catalogue everything from reviewing backlogs, to a preliminary work list and scheduling work orders and bookings. From there, orders could be scheduled and the necessary preparation and work completed. When the concept was piloted in one of the plants, there was a 72% reduction in corrective maintenance with a shift towards more preventive maintenance.

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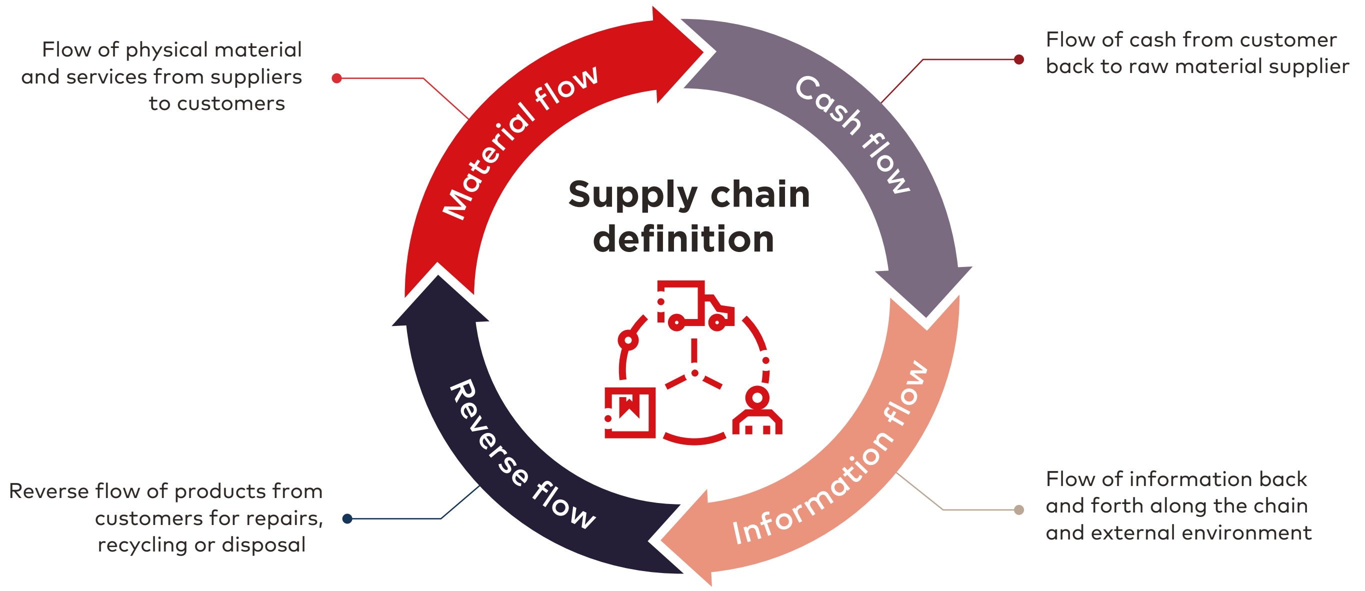

3. Supply chain management workstream

Supply chain management broadly focuses on the movement of material and information. dss+ and the client looked at product flow optimisation, working capital reduction and jetty occupation improvement, to move product more efficiently.

A bottom-up assessment approach for the supply chain was implemented – including process mapping, qualifying and quantifying opportunities and reviewing the effectiveness of management operating systems. Some of the steps taken were to determine the root causes of jetty congestion and mitigate demurrage risks. The jetty optimisation initiative addressed multiple issues with how the jetty was managed. Daily inventory status would support the management of inventories to reduce costs of capital expense of excess. Following the improvements installed with the client, dss+ observed a 34% reduction in average waiting times and a 35% reduction in average monthly demurrage fees. The average pumping ratio also increased by 9% and logistics costs were reduced to 38%.

Assignment

Deliver Operations Excellence program through the installation of Lean principles.

Offering

Operational Excellence.

Impact

- The operations workstream trained and coached 280 employees throughout the refineries on the use of the Production Loss Accounting tool.
- The maintenance function measured a 72% reduction in corrective maintenance.
- The jetty optimisation initiative addressed multiple issues that impacted cash savings within the first 3 months of the project.
- In the first three quarters of the program, 25% of its targeted amounts had been achieved.
- The cash savings helped the project fully pay for itself within the first five months.

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