



**Royal
HaskoningDHV**
Enhancing Society Together

**Manufacturing
Services**



In-depth expertise for successful manufacturing

Manufacturing today is a complex and technical process in which you are expected to deliver high quality goods against tight deadlines and demanding budgets. To a large extent, success depends on the excellence and efficiency of primary and supporting processes (Manufacturing Services).

Within this relentlessly demanding environment, Royal HaskoningDHV offers a wide range of Manufacturing Services expertise that will help you to achieve savings, secure operational reliability and increase profit margins.

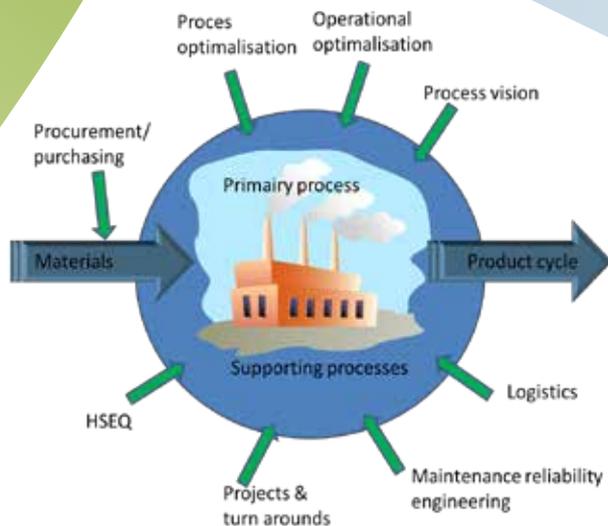
The challenge

As a manufacturer you are challenged by globalisation, raw materials scarcity, high energy costs and, sometimes, a lack of suitably qualified personnel. As such, the future of your company depends on tackling these issues by embedding the highest levels of Manufacturing Services for the following areas of operations:

- Process Vision
- Procurement/Purchasing
- Supply Chain Risk Management of raw materials and end products
- Operations and Process Optimisation
- Maintenance and Reliability Engineering
- Turnarounds and Projects
- HSEQ
- Logistics

Our Manufacturing Services capability

Royal HaskoningDHV is a unique contractor for manufacturing services because we are certified for a large asset management contracts in accordance with PAS55 (ISO 55000 series in 2014). And we offer high-level expertise for all key Manufacturing Services, ensuring that you are able to maximise every stage of the manufacturing chain.



Manufacturing Chain graphic

We have extensive experience in risk performance maintenance and the management of industrial assets. In addition we have in-depth knowledge and experience of both process and content.

Process Vision

Your processes are constantly adjusted to meet market demand and new regulations. For this reason it is essential that you put in place a thorough Process Vision in which you assess and plan the means of production over the long term. Only then will you be able to respond effectively and decisively to changes and weighted decisions. Thus, in a manufacturing context, Process Vision becomes nothing less than a vision for your company.

We can help you to develop a comprehensive Process Vision that takes into account all issues. Our expertise extends to new business models such as Tabachem chemical leasing®, or chain integration, and the smart use of batch to continuous processes offer the opportunity to optimize the process.

Purchase/Procurement

The purchase of materials and services is a key operating cost and central to the efficiency of your company. To accurately assess offers from suppliers and contractors requires a proper combination of technical, legal and economic knowledge.

This knowledge is not always present in the Purchasing department. We can help you to address this by giving you access to our Purchase/Procurement organisation containing experts with specific and up-to-date technical, product, services and legal knowledge.

Supply Chain Risk Management

Upstream and downstream supply risks should be addressed at the highest levels of your company. The result should be a proper supply chain risk management strategy and register. Only then will you avoid negative impacts on the continuity and viability of the primary process and/or innovation and efficiency investments.

Our supply chain experts can make a valuable contribution in this area so that the analysis leads to a supply chain that maintains the continuity of your primary processes. You will also have visibility into how flexibly your operations can be organised in order to respond to disruptive supply scenarios.

Operations/Process Optimisation

Your production processes and operations need to be optimised towards market demand. This requires constant process optimisation so that you operate with minimal use of power and minimal outflow of waste and emissions, while maintaining the quantity and quality of production. In order to achieve this, it might be necessary to consider changes to your logistics, technical aspects and processes. Here, our experts can help you to apply the latest technical and sustainability knowledge and thinking to all relevant processes and by providing a 'cold-eye' review.

Maintenance Reliability Engineering (MRE)

MRE involves identifying and managing risks that have the potential to disrupt the production process and damage the business. Proper and effective MRE will minimise downtime and the number of adverse events, which in turn reduces operational costs. Our experts can help you to optimise your MRE by combining the project with safety and compliance trajectories.*

Our experts (mechanical, electrical, process and civil) can be deployed for MRE at the strategic, tactical and operational levels. Our experts work according to the PAS55 / ISO55000 method. In addition we strive to combine MRE with safety and compliance trajectories in order to work as efficiently as possible.

Turnarounds and Projects

Every so often your processes will undergo change due the replacement of obsolete equipment, regulatory changes, necessary optimizations or changes in production capacity. These adjustments are usually performed as a project or, if the changes are very significant, as a 'turnaround'. This brings challenges:

- Disruption of operations
- Funding for the project
- Implementation of a specific project organisation
- Excellent communication with operations.

Our expertise can help you to achieve efficiency for projects and turnarounds via thorough technical and logistical support allied to strong project management. Downtime will be minimised. And through careful planning and foresight, unexpected operational problems following the project or turnaround can also be eliminated or significantly reduced.

HSEQ - Safety

Manufacturing is particularly susceptible to the occupational risks that can arise from activities such as the storage, use and transport of materials that might affect the health and wellbeing of employees and local residents. At the same time, safety is an increasingly high-profile issue. Failure to apply the highest levels of safety can adversely affect stakeholders, governments, NGOs and the public.

There is extensive legislation regarding all aspects of safety. Complying with ever-evolving legislation is time consuming and requires considerable legal and technical knowledge. If you lack the resources to maintain this knowledge full time, our experts can provide it as and when necessary.

HSEQ - Licence to operate

Your permits are legal permissions to engage activities under certain conditions. In addition, some legislation and regulations are directly applicable to your business and must be observed in order for you to operate.

The trend is that laws and regulations are complex, extensive and ever changing. Moreover, eligibility for funding often depends on compliance with laws and regulations, industry standards and social responsibility. In addition, local residents, the media and interest groups often exert pressure by checking compliance with laws, regulations and permits.

As such, highly specific knowledge is required to ensure the success of permit procedures and internal company compliance audits. Our legal and technical experts can add value here with their specialist knowledge of the latest permitting and regulatory developments.

Insourcing

Manufacturing Services are important routes to efficiency and business success. However, you might not have the skills to perform effective Manufacturing Services as these skills differ from the day-to-day skills necessary for regular operations. In these instances, the Insourcing of support, expertise or experience does more than add value – it is absolutely necessary.

Effective Insourcing can be arranged flexibly depending on the topic, task or process. You can achieve this by:

- Determining which roles are granted to contractors (see picture below)
- Regular cooperation with a small pool of contractors, ensuring a relationship based on loyalty and specific knowledge
- The use of incentives for contractors (e.g. a bonus in solving the problem or share in the profits)



The outcome

Our approach to Manufacturing Services is always tailored to your precise wishes, requirements and circumstances. The result will be the optimal operation of your manufacturing procedures and successful compliance regulatory requirements. This has the potential to be of significant commercial benefit to your business. Royal HaskoningDHV has extensive experience of working for manufacturing clients in a number of territories. Clients include:

Shell, Tata Steel, Continental Air Liquide, Vermillion, VNCI, Maschem, Friesland Campina.



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