

Manufacturing Advisory Services

Advise, design and implement

Advisory services

- Operational improvement of existing manufacturing facility
- Identifies, quantifies and prioritizes opportunities for improvement
- Recommendation of total energy management initiatives

Design

- Design and plan new facilities or redesign existing operations
- Defines long-term strategy to improve business decisions

- Green technologies

Implementation

- Implement operational improvement
- Detailed plant engineering
- Proactive maintenance



Husky's Manufacturing Advisory Services team works with customers to improve overall operating efficiency.

The Husky® Manufacturing Advisory Services team provides operational consulting, design and project management services to help customers increase the operating efficiency of their plastic injection molding facilities.

Our team consists of industry focused consultants who examine injection molding production processes and procedures from a production efficiency point of view. We have a comprehensive understanding of all factors affecting part cost. Working with Husky, customers can identify and implement ways to enhance internal processes, minimize energy consumption and reduce their carbon footprint, increase productivity in injection molding facilities and boost bottom line results.

Our team evaluates improvement opportunities, including:

- Examining new or existing plastic component programs
- Options within existing operations
- Measuring and controlling energy consumption with total energy management initiatives

Whether support is needed in planning a greenfield facility or a feasibility study is requested to review the manufacturing of a new or existing plastics component program, Husky will provide objective analysis to help create a roadmap to success.

There are three key areas within Husky's Manufacturing Advisory Services program. Individually, each can bring value to a

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Keeping our customers in the lead

customer's operation, but in combination they can have a significant impact. Husky's Manufacturing Advisory Services program is comprised of:

- Advisory services
- Design services
- Implementation

1. Advisory services

Comprehensive operational assessment

A detailed operational assessment is an ideal way for molders to improve overall manufacturing efficiencies and reduce operating costs. The assessment identifies, quantifies and prioritizes opportunities for improvement within the entire manufacturing operation and facility—and is the first step in developing a fully optimized injection molding facility. Although results

vary from plant to plant, savings identified typically fall within 10% to 30% of operating costs.

Husky optimization engineers lead customers through a series of activities to collect and evaluate relevant data and define areas of focus, such as:

- Operational effectiveness
- Energy reduction and management
- Tooling standards
- Machine layout
- Plant operating procedures
- Production monitoring systems
- Process infrastructure and automation

An assessment team from Husky typically spends one week in a customer's facility interviewing team members, measuring

and analyzing existing processes and operations, comparing metrics to performance benchmarks and establishing potential operational savings.

Following a structured approach, our team provides an impartial assessment of both quantitative and qualitative aspects of the business and factory. Using collected data, quantitative aspects of plant performance, such as Overall Equipment Effectiveness (OEE) and scrap rates, are calculated. Qualitative areas, such as safety, infrastructure and equipment conditions are assessed based on the observations and experience of Husky's optimization team.

The assessment ends with a summary presentation, report of findings, recommendations, an action plan and proposal for the implementation of the recommended improvements.

Total energy management

As the cost of energy continues to rise, the importance of realizing overall efficiency gains (measured in kW/kg of resin processed) has never been more important to injection molders. Integrating process service technologies with leading-edge building technologies is the key to realizing sustainable cost savings over the long-term. In addition, implementation of a total energy management approach can help maintain a robust and consistent process infrastructure and assist in the conservation of valuable resources.



Husky experts conduct detailed assessments of customer facilities to identify areas of improvement.

Husky's total energy management program uses a holistic approach to achieve continuous and sustainable energy reduction in an injection molding operation.

- Phase 1—Husky spends one to two weeks in the customer facility measuring and analyzing existing information and setting up the necessary infrastructure to maintain a successful energy management program. A summary presentation, findings report, action plan and proposal is included, as well as energy measurements on selected equipment within the plant.
- Phase 2—Implementation of the projects identified in Phase 1.

Government regulations continue to be introduced worldwide, which are designed to reduce pollution, including the manufacturing sector. Now more than ever, it is critical that organizations voluntarily invest in their manufacturing facilities to ensure compliance with these regulations.

Implementation of operational improvements

Once the assessment is complete, Husky facilitates the implementation of the recommended operational performance improvements.

Based on the results of the initial assessment, Husky's manufacturing optimization and advisory services engineers can assist customers in developing a framework of best-in-class manufacturing practices, procedures and measurements, as well as key performance indicators (KPIs) for their injection molding operation. This process ensures that practices are properly implemented and established for long-term, optimized operational performance.

Husky will work with a customer's improvement team to oversee the implementation process by conducting follow-up visits,

approximately once a month for six to eight months. This establishes measurements that can track the progress of each project and/or performance indicators, as well as training of the people involved.

Plant flow simulation

Husky provides a simulation of a factory's current state targeting machines, molds and secondary operations. This presents a vision of the factory's future state, under different possible scenarios. The model simulates the production of injection molded parts, complete mold changes and assembled products, as required for a one-year period. Variables like mold change time, supply inventory, machine breakdown and reliability, mold cavitation and cycle time are also compared.

Benefits and deliverables:

- Identification of current factory bottlenecks that inhibit on-time delivery
- Understanding of the current state of the production facility and the impact on production growth
- Effects of seasonality
- Run-time model of the software

Injection molders would benefit from this service if they are:

- Experiencing production growth
- Needing to optimize inventory levels to meet demand
- Considering the purchase of new machines
- Wanting to gain an understanding of factory interdependencies

2. Design services

Factory planning

This service is typically used by customers exploring the feasibility of plant expansion, relocation, consolidation or those who are looking to build a new facility. Husky's factory planning and optimization study uses a structured approach to create a roadmap for a customer's molding business that will

help to maximize efficiencies and build in the flexibility necessary to meet future requirements.

Factory planning and optimization defines a long-term manufacturing strategy that can be used to direct and prioritize business decisions. This proven methodology has formed the foundation for hundreds of new and existing plant improvement projects.

Manufacturing optimization engineers focus on business objectives. Different facility and infrastructure options, as well as equipment strategies, are thoroughly evaluated to maximize operating efficiency.

The evaluation covers:

- Workcell design
- Equipment standardization
- Process and utility services
- Resin handling and distribution
- Product handling and inventory
- Plant layout and design
- Environment—HVAC
- Outline specifications

For the long-term benefit of our customers' businesses—and the environment—Husky designs green buildings that will provide the smallest carbon footprint afforded by current technology.

Infrastructure design services

This service ensures the facility meets the design intent established in the factory planning study. Husky provides detailed engineering support for the options selected by the customer from the initial study. Detailed building and infrastructure engineering and design can be provided in the following areas:

- Process water system (mold and machine cooling)
- Process air
- Process electrical
- HVAC
- Resin handling system
- Structural
- Environmental and energy reduction

For customers expanding or upgrading existing facilities, Husky's mechanical and electrical engineers will provide a detailed engineering specification for an optimized process services system. This considers the specific industry, future growth, geographic location, as well as operational and capital costs.

3. Implementation

Project management

Once the factory planning and facility engineering phases are complete, the next step is implementation. Husky offers project management services to ensure successful

completion of projects. This can include:

- Management of engineering resources
- Pre-qualification of vendors
- Coordinating and interfacing with client suppliers and vendors
- Bid management (evaluation and recommendations)
- Management of contracts and schedules
- On-site supervision during construction and installation
- Review drawings and specifications for conformance to project requirements
- Review, monitor and report on project progress and budget
- Review and evaluate project changes
- Start-up and commissioning of process systems
- Carry out deficiency inspections
- Obtain close-out documentation

Commitment to sustainability

Husky Manufacturing Advisory Services work to design to the most energy efficient and sustainable equipment models. Implementation can result in long-term savings, vastly improving a customer's carbon footprint through a more efficient use of equipment. In addition, many local and national government incentives and subsidies exist to support green thinking. Husky can help customers access these resources, as well as recommend rebates for which they may be eligible to apply.

Commitment to confidentiality

Please note that any customer information collected by Husky's Manufacturing Advisory Services team is held in strict confidence.

Contact Husky today for more information on our Manufacturing Advisory Services.

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