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Capturing value from manufacturing support functions

Often ignored, manufacturing support functions offer significant value creation potential—but concrete improvement actions and transformation approaches are needed to realize it.

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The global manufacturing industry faces a challenging environment, with increasing energy prices, tariffs affecting exports, and slowing demand. The default solution—outsourcing production to best-cost countries—is not always possible, particularly in a world of geopolitical and geoeconomic uncertainties, unstable supply chains, and unpredictable tariffs.

Operations leaders are having to consider their cost base and rethink their operational efficiencies to remain competitive. Areas must be found where costs can be optimized—and leaders frequently turn first toward direct operations. However, companies can instead (or also) consider an often-overlooked area of significant cost-savings potential: manufacturing support functions. Also known as indirect operations, these production support functions—engineering, quality management, production management, maintenance, and supply chain management—are vital to efficient, day-to-day factory operations and frequently offer opportunities for value creation.

Admittedly, assessing the potential locked up within manufacturing support functions can be complex. Often an individual company, and even plants within a company, follow their own structuring and evaluation model (including different definitions of titles and functional roles), leading to a lack of standardization. This, in turn, makes it difficult to compare the performance of manufacturing support functions across companies.

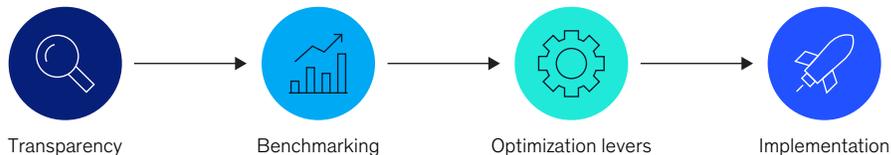
In fact, many operations managers may know they have excess capacity in their support functions but do not know how much or where the excess capacity is. Four steps can help leaders better understand the opportunity within manufacturing support functions so they can set fact-based targets and move toward effective action (Exhibit 1).

First, companies can create transparency of their baseline of total internal and external full-time equivalent (FTE) capacity in manufacturing support functions, as well as of their underlying workload drivers. Second, they can benchmark against both external peers and internally between plants to assess how efficient their manufacturing support functions are. The third action is to identify concrete optimization levers, quantify them for benefits and costs, and create a road map for implementation. And last, they can effectively implement and track that road map, including by building capabilities to generate rapid and sustainable impact.

Exhibit 1

A four-step roadmap unlocks value in manufacturing support functions.

From transparency to value capture



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Using a seven-lever framework to capture value

While understanding that individual companies may experience specific challenges in their fields of operation, based on our work with clients, we have identified seven improvement lenses that can broadly be applied across support functions (Exhibit 2). Lean manufacturing companies apply most, if not all, of them.

Exhibit 2

Companies can use a seven-lever framework to capture value within manufacturing support functions.

Framework



Reduce demand



Redesign the operating model



Rethink offshoring and outsourcing



Enhance process efficiency



Enable through technology



Manage performance and productivity



Develop capabilities and mindsets

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1. Reduce demand

In manufacturing support functions, it is not the customer who determines the demand and scope of work, but the company itself, by defining and effectively managing internal policies, setting standards, and so forth.

An effective lever here is to prioritize value-adding activities and reduce the number of tasks that are not vital for supporting production processes. This requires clearly defining and purely focusing on the scope of work for each function. By aligning capacities with strategic priorities and service levels, truly value-adding activities can be identified, particularly for control plans, maintenance, production management, and logistics.

We have seen that a value-add opportunity of up to 10 percent can be created by optimizing quality-control plans (both in terms of frequency and scope) as advanced in-process controls become more common in production.

In maintenance, companies that optimize reliability strategies for machines and tools can stop machinery from being replaced and overhauled too early and avoid breakdowns and damages. This can typically lead to a 5 to 10 percent savings.

Production leaders often spend a large share of their time on administrative tasks, such as planning shifts and holidays for shop floor teams or participating in team meetings. Smart self-service solutions now exist for many routine-like tasks such as these, freeing up valuable time for production leaders. Together with streamlining regular meetings, attendance, and practices, this can improve value-add by about 10 percent.

In logistics, physically connecting or colocating single process steps into value streams can avoid the need for in-plant material handling. For instance, connecting process steps and optimizing layouts can result in fewer handling requirements.



2. Redesign the operating model

Whether to centralize or decentralize support functions has been a discussion point for decades, but recent digitization advancements are creating new opportunities for operating models. Still, the golden rules of centralization remain. Centralization is usually best when work is analytical, repeatable, or standards-driven, or when scale or specialization adds value and speed comes from patterns rather than proximity. Decentralization is often the better option when work requires real-time decision-making, physical presence is important, or human judgment and context are more valuable than process.

Applying these principles could lead to a new operating model for manufacturers across maintenance, supply chain management, and quality.

In maintenance, for example, centralized planning and scheduling teams can create preventive and predictive maintenance plans for all plants, instead of each plant creating its own. Likewise, specialist engineering tasks such as vibration analysis, thermography, and oil analysis can be performed by a shared specialist reliability engineering team. Spare-parts management can be pooled, too, with certain strategic parts physically or virtually consolidated into regional warehouses. Autonomous maintenance can support faster response and increased asset ownership.

In supply chain, a central demand-planning team can orchestrate customer electronic data interchanges (EDIs) and create a master production schedule for multiple factories. Integrated production and capacity planning helps balance constraints across a plant network, instead of each factory optimizing at the local level. Similarly, inbound and outbound freight can be organized regionally instead of plant by plant. Other tactics include integrating external warehouses into existing plants as soon as space becomes available within the four walls of the plant and combining material handling across departments to balance routes and capacity.

In quality, manufacturers may consider consolidating various inspection operations across production, warehouses, and quality teams. Central process engineering and industrial engineering teams can design standard production lines for reuse globally, while standard equipment and line design libraries help drive consistency and standardization when new products are introduced.



3. Rethink offshoring and outsourcing

Companies can look for cost savings by aligning internal roles and responsibilities with external collaboration models, balancing agility with pooled economies of scale. This includes defining the best build-vs.-buy strategy—deciding which services to perform internally and which to outsource. Offshoring and outsourcing strategies are worth considering when response time and physical interactions do not matter.

In computer-aided manufacturing (CAM), for example, many companies offshore the programming of computer numerical control (CNC) machines to best-cost countries. Transferring routine preventive tasks and standard failure response routines to operators through autonomous maintenance can further unlock value in maintenance.



4. Enhance process efficiency

Value-stream mapping (VSM) has proven an effective tool for improving efficiency and reducing the complexity of shop floor processes, and it has applications in support functions, too. For the most frequent tasks or services, mapping optimal process flows can pinpoint unnecessary or low-value-adding steps, such as exception handling, handovers between teams, data inconsistencies, and data transfers between IT systems.

Here, a 20 to 30 percent improvement can be achieved by a range of different interventions—for example, introducing multiple machine handling in laboratories; using magazines for loading and measurement machines; and establishing clear service levels and interfaces in handling customer claims across the various quality-focused teams.

In logistics, a 10 to 15 percent improvement could be achieved by enhancing overall material flows and line layouts to minimize the number of handling steps and storage locations, as well as by optimizing storage systems, including rack and warehouse layouts. Converting forklift traffic into trolley routes could lead to a 30 to 40 percent optimization, while streamlining shipping preparation and truck loading or unloading operations could also have a positive impact.

Standardizing production technologies and equipment adds further value, while simplifying processes for planning new lines and product launches could unlock a 15 to 20 percent value-add in engineering.

Maintenance-wise, companies can streamline work order processes—from notification and preparation to execution and closure—potentially achieving up to a 15 percent value-add by improving the process of preparing maintenance work orders and dispatching technicians to their next job.



5. Enable through technology

As automation solutions continue to improve and investment requirements come down, both blue- and white-collar workers are being exposed to new opportunities to improve activities and processes using AI and robotic process automation (RPA).

Automation supports physical production on the factory floor, and office work is being transformed through the application of innovative technologies. RPA, for example, can be used for routine tasks involving access data and its transfer between multiple IT systems. This is applicable to all support functions, and in single cases can lead to as much as a 60 percent efficiency improvement.

Gen-AI-powered tools can now assist in complex or work-intensive tasks that deal with multiple data sources. Gen AI's ability to analyze root causes, optimize preventive maintenance plans, and develop predictive maintenance routines makes it particularly effective in the maintenance function.

In quality-control functions, automation can reduce documentation efforts by up to 25 to 40 percent. Further improvements can be made by automating material transport into and out of measurement rooms, or by prefiling audit reports based on existing internal documents, for example.

In production scheduling, automation can detect and address risks in supply chains and production schedules, while in logistics, automated guided vehicles (AGVs) can perform material-handling tasks and organize the line-side supply of pallets and small boxes.



6. Manage performance and productivity

Most manufacturing support functions participate in regular tier reviews and performance meetings at the plant level. In many cases, these performance discussions primarily deal with how effectively the support services are serving production, such as providing material supplies and repairing machines on time, or avoiding picking errors.

Effectiveness, however, is only one side of the performance coin—productivity is the other. Performance reviews inside each support function team can boost productivity and efficiency. By looking at KPIs and improvement opportunities—as production employees have done for decades—there is no reason to believe manufacturing support function employees cannot benefit in the same way.

Despite automation trends, many activities in support functions may remain manual, often repetitive, and hence similar to shop floor tasks. These processes can be managed in the same way: applying industrial standards to these indirect activities, matching capacity with demand, introducing work balancing, and installing effective daily shop floor management practices such as productivity KPIs.

Examples of highly standardizable activities include laboratory operations, inbound quality inspections, and processing warranty cases, all of which can lead to a 15 to 20 percent value-add, based on what we observe with clients.

In supply chain management, optimizing material-handling tasks in warehouses and production can unlock around a 10 percent value-add. Optimizing preventive tasks, inspections, and planned repairs in maintenance can potentially reach a 10 to 15 percent improvement, while machine programming in engineering could create a 10 percent value-add.



7. Develop capabilities and mindsets

Finally, companies can rethink their talent strategies by identifying, developing, and scaling critical competencies for specific jobs, supported by acquiring and retaining an optimal mix of talent. Developing a sound organizational culture is also critical for encouraging behaviors that support optimal service levels and the efficient use of resources.

At a concrete level, companies can work on developing skills matrices according to role descriptions; defining and managing day-to-day upskilling and training activities; and finding room on leaders' calendars for coaching and feedback (and honing their coaching skills, as needed).

Implementing an approach to improving manufacturing support functions

In companies with large production networks that want to optimize their manufacturing support functions, we typically see one of three approaches followed: zero-based targeting, plant sprints for defining new operating models, and a field and forum approach.

Approach	Best use case	Speed	Expected impact
Zero-based targeting	Radical redesign	Slow	Very high
Operating model sprints	Targeted improvements	Fast	Medium
Field and forum approach	Large plant networks	Medium	High

Zero-based targeting. This approach reassesses everything from scratch, where every activity needs to be justified. “Absolute minimum” activities are added until the “theoretical optimum” of a function’s services is reached.

The zero-based approach is beneficial when a support function is stuck in a rut and significant, disruptive improvement is needed to establish new ways of working and to put new processes in place. For example, a material-handling operation used it to establish a fresh start by introducing a plan-for-every-part (PFEP), detailing all the necessary material movements in the plant.

This approach can lead to substantial cost reduction due to the radical rethinking of how to accomplish tasks. It also helps people’s performance by making them take a step back to evaluate their current activities—difficult to achieve when people are caught up in day-to-day operations.

The zero-based approach has its drawbacks, however: Implementation can be complex and time consuming, sometimes taking 12 to 18 months to fully realize impact. It, too, requires a cultural shift that may face resistance from employees who are more accustomed to traditional budgeting and improvement methods.

Targeted operating model sprints in plants. Sprints are focused improvement interventions aimed at optimizing specific functional areas with a small group of experts. Sprints typically consist of three steps: (1) defining a problem statement, baselining, and measuring development; (2) detailing and quantification; and (3) decision-making.

The advantage of sprints is that they help to rapidly prototype and test new processes, which can accelerate innovation and allow for quick adjustments based on feedback. Cross-functional teams can break down silos and foster a more integrated approach to problem solving. This makes the targeted sprint approach appropriate for companies that need to work on specific areas without disturbing the whole organization—though it can lead to decreased buy-in across the company. Workshops with cross-functional teams can support the development of appropriate road maps and measurement plans.

A production company with over 20,000 indirect FTEs across more than 25 plants applied this approach, aiming to realize a 7 to 9 percent EBIT uplift by optimizing its manufacturing support functions. First, benchmarking results indicated up to a 28 percent cost reduction potential in single support functions. Then jointly developed targets with functional heads resulted in a commitment to 20 to 25 percent cost savings.

Field and forum approach. This approach is well suited to large organizations such as automotive suppliers operating more than 100 plants globally. It combines structured learning and coaching with hands-on implementation work.

Here, plants with similar operating models and challenges are grouped into cohorts. The plants first meet to learn critical diagnostic and transformation methods, as well as best practices, in an academy-style setting (“the forum”). They then continue their individual transformation journeys and define and adopt their implementation plans. During this time, plants receive individual expert support on specific topics and spread their learnings across their cohort group.

The field and forum approach offers advantages such as high deployment speed and scalability, as it allows for methods to be implemented quickly across various functions and geographies, including using digital tools. It also promotes practical application, with a central team coaching how new standards and tools can be effectively integrated and supporting capability building and change management.

This approach is useful when various plants or certain functions need to be prioritized within a larger plant network (for example, quality management in a business unit or in product groups). It can help develop practical measures, as it identifies and quantifies improvement levers for every function and creates road maps with clear goals to close the gap to the benchmark.

A reliance on remote implementation, however, can limit hands-on support and reduce the time available for in-person coaching. The approach can also be complex because of the similarity of levers across multiple sites—such as maintenance and root-cause problem solving. The large number of sites involved further complicates coordination and implementation efforts.

One company with more than 90 plants globally successfully used this method to assess the cost-savings potential within its manufacturing support functions. Through benchmarking, performance levels became more tangible for plant managers, and a fact-based view on performance levels prompted a convincing call to action.

The company identified plants by function based on their gap to peers. High performers and managers with development potential were first trained at workshops and later shared what had worked well for them, such as testing schedules for quality. This made it easier for others to understand and scale successful interventions.

By applying classroom lessons in the home plant directly after receiving support from high-performance plants, managers were able to make sustainable changes. The approach helped the company reduce 5 percent of its manufacturing support function cost within the first three months after target setting, despite volumes growing over this period.

Over the past few years, many manufacturing companies have been forced to transform their large-scale performance despite a challenging operating environment. Although manufacturing support functions are incrementally becoming an integral part of these changes, they still offer significant potential for further value creation.

While benchmarking methods compare effectiveness and efficiency and, importantly, point toward areas of improvement, concrete improvement levers and transformation approaches need to be applied if companies are to capture the greatest value from their manufacturing support functions.

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