

FABRICATED METALS: AN INDUSTRY IN TRANSITION

EXPLORING THE MANUFACTURING PRACTICES THAT LEAD
TO PROFITABLE GROWTH

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EXECUTIVE SUMMARY

FACING TOUGH CHALLENGES

Today's fabricated metals industry is unforgiving. The competitive landscape is in constant flux as new market entrants keep downward pressure on profit margins. To stay competitive, fabricated metals manufacturers have a tall order: control operational costs, improve manufacturing processes, and streamline distribution while strengthening customer relationships. And they need to keep an eye on long-term opportunities for growth at the same time.

The fabricated metals industry – including metals service centers, suppliers, and consumer products manufacturers – is dominated primarily by small to midsize companies. Many of these metals manufacturers are wrestling with how to accomplish all of the above goals while contending with the outdated, nonintegrated computer systems that manage their critical manufacturing, human resources, supply chain, and financial information. They are realizing that past practices of underinvest-

ing in technology have put them at a disadvantage and that their limited technology infrastructure can actually prevent them from operating efficiently across geographies and reaching profitability goals.

How can a fabricated metals manufacturer provide the exceptional customer service and high-quality, competitively priced metals products its customers need to grow their businesses profitably? The manufacturer must rely on leading best-practices solutions to gain control over every aspect of business – from streamlining manufacturing to collaborating with suppliers and customers to implementing growth strategies. This paper details how fabricated metals manufacturers can remain profitable in a difficult market by concentrating on four important tasks: reducing operational costs, improving manufacturing and transportation efficiencies, supporting customers, and mapping profitable growth strategies.

Midsize fabricated metals manufacturers face a challenging business environment characterized by industry consolidation, increased competition, shrinking product life cycles, and thin margins – and most of them must face these market realities with outdated information technology infrastructures.

INDUSTRY BACKGROUND AND OVERVIEW

MEETING THE DEMANDS OF A CHANGING MARKETPLACE

Fabricated metals is a mature industry. Metals service centers produce make-to-order (MTO) metal sheets, plates, tubes, and pipes in close partnership with steel producers and manufacturers. Metalworkers and suppliers provide metal stamping, valves, metal coating, and fabricated metal parts for manufacturers – from the automotive to the aerospace industries. Finally, consumer products manufacturers produce primarily make-to-stock (MTS) metal commodities such as cutlery, nuts, screws, wire, and tools for wholesalers and home improvement stores.

Metals manufacturers operate using MTO and MTS manufacturing methods, with the vast majority relying on a combination of the two to maximize plant utilization and profitability. On the MTO end of the spectrum, fabricated metals manufacturers must maintain close, focused relationships with customers and support a complex supply chain to

produce customized products. On the MTS end, metals manufacturers crank out simple, mass-produced fasteners such as nuts and bolts for home improvement centers.

Regardless of which customer base a company serves, five significant market trends are making a major impact on the fabricated metals industry today. This section explores these trends in detail.

Industry Consolidation

Amid rampant industry consolidation, mergers and acquisitions between metals service-center companies happen with great frequency. To remain viable, fabricated metals companies must be able to craft and execute long-term growth, sustainability, and integration strategies. Achieving organic growth might necessitate opening new sales channels or moving up the value chain

into new value-added services. Encouraging external growth could require implementing globalization initiatives to expand footprints into new geographies and markets or acquiring companies to gain entry into new markets or product lines.

Extensive Cost-Cutting Pressures

Overall, fabricated metals manufacturers have gone through extensive cost-cutting activities to trim production expenses. Now the focus is on expanding these cost-cutting efforts to the entire supply chain to deliver increased efficiencies and further reduce material, inventory, and distribution costs. Metals products companies need to control the flow of material and financial information across multiple plant locations to maximize productivity through economies of scale – for example, by sharing common costs on the production of similar items with different applications.

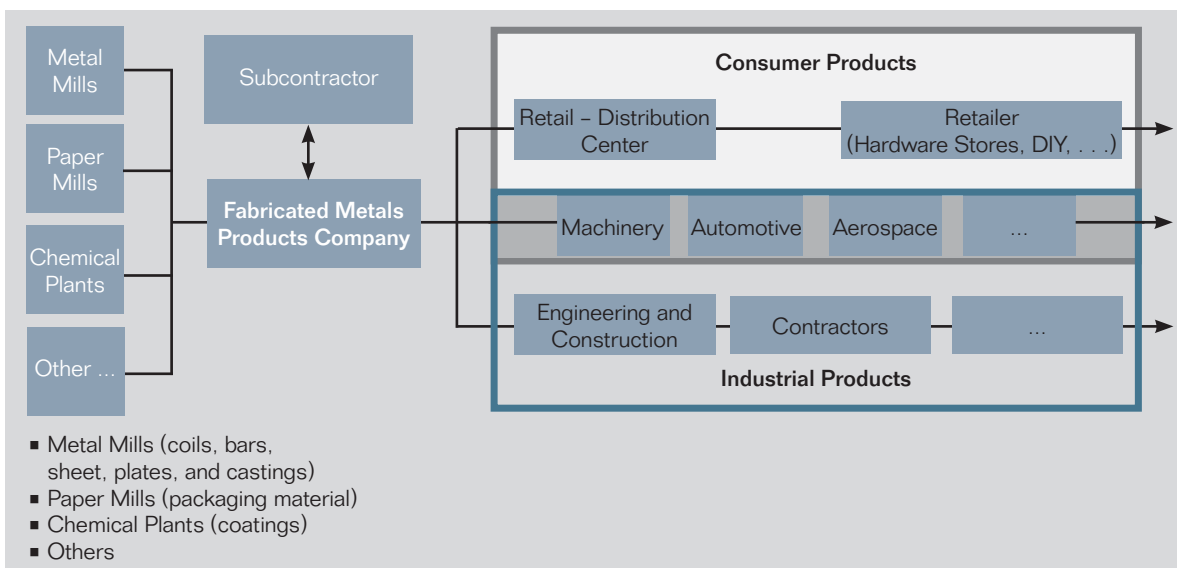


Figure 1: The Fabricated Metals Industry

And steel prices are at or near all-time highs, putting additional pressure on margins and hitting the bottom line of metals service centers especially hard.

Increased Competition

The metals products segment is characterized by minimal entry and exit barriers, which allow low-cost providers to enter the market at any time. Asia in particular is now burgeoning with com-

Metals manufacturers are beginning to realize that past practices of underinvesting in technology have left them with a limited technology infrastructure that puts them at a disadvantage – and can actually prevent them from operating efficiently across geographies and reaching profitability goals.

panies that produce comparable products at lower price points. As customers move production facilities abroad, new competitors spring up in local markets to take advantage of lower costs, particularly in the area of transportation. Since customers are always looking for a lower-cost supplier, this increased competition can squeeze prices and margins. Fabricated metals manufacturers need to take aggressive measures to continue to improve operational efficiencies – in ways that reduce material waste, inventory, and working capital as well as provide value-added services that can command wider margins.

Outdated IT Infrastructure

A typical midsize metals manufacturer may spend up to US\$1.5 million per year maintaining outdated and inefficient legacy computer systems. These systems, typically homegrown or from small, local vendors, often lack scalability or the standardization required to leverage functionality across an enterprise – much less support economies of scale or international expansion.

Many manufacturers are using manual processes to connect multiple, disjointed systems. This approach is not only inefficient and costly but error prone as well. And antiquated systems jeopardize compliance with the Sarbanes-Oxley Act and other environmental, health, and safety regulations. Many midsize fabricated metals manufacturers need to play catch-up and bring their IT infrastructure up to a level that can support future growth. However, they must do so with limited IT budgets and resources.

Shrinking Product Life Cycles

Commoditized products such as nuts and screws are controlled by the macroeconomic laws of supply and demand. But in metals components and designed finished products, demand is subject to changing customer preferences and technology advances in materials. Responding to trends such as those in the automotive industry, manufacturers have increased the pace of reengineering and product innovation, forcing product life cycles to shrink. With finished-product designs changing so frequently, parts and components life cycles are shortening as well. To sense and respond to changes in demand, fabricated metals manufacturers need to establish collaborative processes with all partners in the supply network. To do this, they must have an IT infrastructure that can support a high level of integration with both suppliers and customers. Amid this challenging industry environment, fabricated metals manufacturers must control manufacturing costs, collaborate with customers and partners, and provide value-added products and services – ultimately, to produce more profitable products.

BEST-PRACTICES OFFERINGS

USING PROVEN SOLUTIONS TO INCREASE PROFITABILITY

Manufacturers need to take aggressive measures to continue improving operational efficiencies – in ways that reduce material waste, inventory, and working capital as well as provide value-added services that can command wider margins.

SAP has over 35 years of experience working with fabricated metals manufacturers of all sizes to control costs, improve manufacturing and transportation processes, increase customer satisfaction, and deliver solid financial results. It understands the best business practices used by successful fabricated metals manufacturers to maintain and grow profitably in the midst of challenging industry realities. With SAP® solutions, management can take control of financial and operational activities and make the forward-thinking decisions that help increase customer satisfaction levels and market share. To improve profitability, metals fabricators should consider employing best practices that can accomplish the following:

- Continue to control operating costs
- Support manufacturing and distribution excellence through the optimum use of material, capacity, and manufacturing assets
- Increase customer satisfaction by delivering value-added services
- Enable growth strategies through the strategic investment of assets and resources

Control Operating Costs

To stay viable in a highly mature market, fabricated metals manufacturers must employ aggressive techniques to keep operating costs under control and then apply these cost-cutting techniques beyond the shop floor.

One best practice in the area of operational cost control is preventive maintenance of equipment. Fabricated metals producers rely on specialized and expensive machinery for surface treatment such as coating lines, cutting and slitting, and metalworking. The uptime and effective utilization of these mechanical investments is the lifeblood of the company. To increase equipment availability and prevent untimely, costly breakdowns, manufacturers should have a strategy to take equipment offline and perform regular, proactive maintenance. Companies that schedule maintenance and replace critical tools can also reduce delays and material waste and further increase plant output. To implement an effective preventive maintenance program, companies need – at a minimum – a system for capturing and analyzing full maintenance histories that include utilization and uptime records for each piece of equipment.

A second best practice is product costing and profitability analysis. Leading fabricated metals manufacturers comprehensively capture, analyze, and apply the actual versus planned costs to produce a product. A manufacturer should be able to investigate “variance to budget” and “variance to forecast” details. Since rarely are any two fabrication jobs identical, this comparative analysis is a difficult and even daunting task given the endless combinations of processes and operations that can be completed on any number of metals. But companies that truly understand their unique cost structures and analyze and apply cost variances reap substantial rewards. By using mix, volume, and cost analysis to drive scheduling and pricing decisions, a metals manufacturer can reduce product costs and time to market as well as price indi-

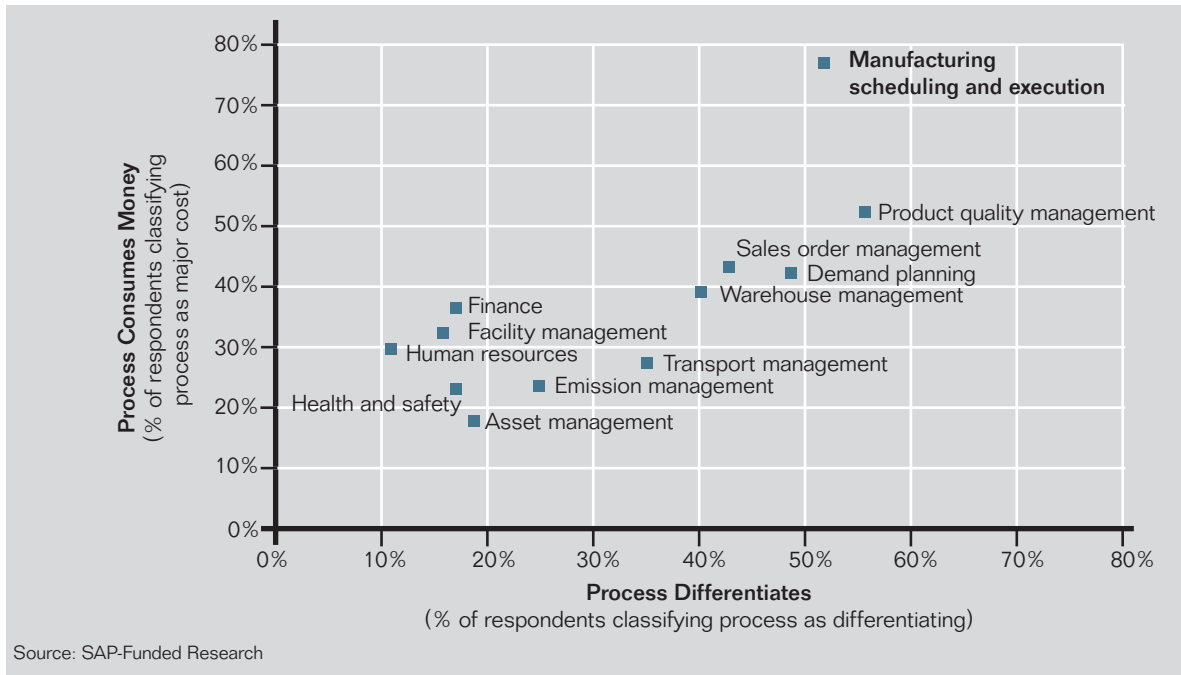


Figure 2: Process Costs Versus Differentiation Opportunity

vidual orders accurately for maximum profitability. For example, identifying whether a capacity constraint or a rush request was responsible for increasing costs on a particular job gives companies the flexibility to price similar jobs more accurately – and to know when to turn away jobs that are likely to have a negative impact on profitability.

Finally, to further control costs, companies can use real-time analytics to actively track operational metrics such as scrap volume, capacity utilization, and production output. Profitability metrics by customer, job type, or other dimensions help manufacturers select the right mix of jobs to support the profitable utilization of machinery.

Support Manufacturing and Distribution Excellence

Because MTO fabricated metals manufacturers address customer needs with very specialized processes and manufacturing methods, it is critical that each job request is priced profitably and that each production run meets customer specifications. By planning and scheduling manufacturing and distribution operations appropriately, manufacturers promote the most profitable use of assets, improve response time to variations in order mix and volumes, and reduce the overall lead time required to fulfill customer demands. To maximize on-time, in-full, and in-quality delivery of orders at minimum cost, metals fabricators need to ensure that equipment is used at the highest profit-

able levels. Capacity and production planning is critical to supporting the strategic use of available material as well as manufacturing and distributing assets across both internal and external supply chain networks. But scheduling and execution technologies are often among the more expensive IT investments a metals products company can make, as shown in Figure 2.

With the right mix of MTO and MTS manufacturing in place, fabricated metals producers can decrease production lead times, scrap, and work-in-progress inventory while increasing yield. Applications that enhance visibility into operational processes can give a metals company every possible opportunity to adhere to customer requests while increasing asset utilization.

With supply planning applications that support best practices, manufacturers can share demand forecasts with suppliers. This way, they are ready to deliver raw materials even before they get the official order. Best-in-class collaboration tools give suppliers access to company stock levels and let them take responsibility for replenishment. Raw materials appear at the fabricator precisely when needed, reducing storage costs. And for those metals products manufacturers that elect to use a processor for part of the production cycle, best practices include using tools that connect with vendors' processes. Doing so informs manufacturers exactly when the process will be complete

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and the product ready to ship. By improving visibility into all facets of the manufacturing cycle, companies can address issues quickly and deliver finished products on time, every time.

Another area in which manufacturers can use best practices to increase profitability is distribution and transportation management. Fabricated metals manufacturers that find the lowest-cost alternative for shipping products to customers have distinct competitive advantages: they can keep costs low and reach out to a larger geographic customer base. By optimizing all rele-

vant transportation parameters within the distribution network, metals producers can minimize transportation costs – and their significant impact on the total product cost – as well as improve on-time delivery to customers. To support this, metals fabricators need comprehensive transportation-planning functions that include integrated inventory, warehouse, shipping, and transportation management. Best practices include optimizing inbound and outbound freight, utilizing radio-frequency identification, leveraging cross-docking, and planning transportation based on resource constraints and routing.

Build Customer Satisfaction by Delivering Value-Added Services

Customers are demanding more value-added services, often within an unrealistic time frame. A metals manufacturer that can continually provide its customers with differentiated products and services within the customer's delivery window can command higher margins. But often, the effectiveness and efficiency of a supply chain dictates a manufacturer's ability to meet these aggressive customer demands and deadlines. Best practices include instituting comprehensive order forecasting

and order management, which keep the metals fabricator continually apprised of available capacity, material lead time, and inventory. This way, the fabricator can provide accurate promise dates, most critically when its top customer calls with a time-sensitive job. Manufacturers with this type of visibility can provide superior customer service through real-time feasibility checks based on concrete assessments of their internal capacity and ability to deliver. Leading metals producers can consistently provide realistic delivery dates according to current supply chain capabilities.

Another valuable customer service that leading metals manufacturers provide is tracking customer orders and providing advanced shipping notifications, often two or three days before the product ships. This is especially important for automotive and retail customers that have critical production schedules or retail shelves to fill.

Manufacturers need a comprehensive understanding of the customer relationships in terms of the order portfolio, mix options, and standing orders. With this information, manufacturers can provide customer self-service functions that might include enabling their most valuable customers to create orders, check inventory levels, or access contracts online.

Other premium services a manufacturer can consider for top customers include direct on-site deliveries or pickups (particularly useful for construction yards), automatic inventory replenishment (for automotive assembly plants), and vendor-managed inventory.

Enable Growth Strategies

To grow strategically and stay competitive, fabricated metals manufacturers must actively acquire and merge with other companies, divest assets, and evaluate market entry and exit strategies. Their ability to maximize return on investment, minimize capital and equity risk, and constantly evaluate the impact

To sense and respond to changes in demand, manufacturers need to establish collaborative processes with all partners in the supply network.

A further best practice includes the ability to continuously evaluate long-term opportunities for growth. Metals manufacturers need the ability to model various what-if scenarios including: Should we expand into a new geographic region? Should we extend service offerings? Should we purchase new equipment? Switch suppliers? Merge product lines? Consolidate freight contractors? Chances are the information that can assist in evaluating growth strategies resides in different areas of the business. Best practices involve consolidating the relevant information and using powerful reporting tools to flexibly analyze and examine the feasibility and profitability of various growth initiatives.

of up- or downstream consolidation is critical to their survival. One best practice in this area involves integrating newly acquired assets quickly and efficiently, which enables manufacturers to start realizing the benefits of economies of scale or geographical expansion immediately. For example, companies can benefit by introducing their existing customers to newly acquired lines of products or services.

Companies must also be able to consolidate financial information quickly and integrate often diverse and heterogeneous geographies, each with its own accounting rules and compliance issues. Conversely, they need a process for rapidly divesting portions of acquisitions that are not a strategic fit.

BUSINESS BENEFITS OF BEST-PRACTICE SOLUTIONS

TAKING ADVANTAGE OF CUSTOMIZABLE SOFTWARE PACKAGES

Companies that understand their unique cost structures and analyze and apply cost variances reap substantial rewards.

Because every metals manufacturing business is unique, SAP offers completely customizable software packages along with tailored, modular deployment and growth plans. The packages allow companies to add just the SAP solution components they need today while ensuring they have a solution in place that can grow and adapt for tomorrow. Financing from SAP can make the investment affordable and payments predictable, so midsize manufacturers get the robust set of applications and services they need at a cost well within their budget.

Because metals producers deploy exactly what they need, they can align technology investments with capital flow, expanding system capabilities in step with business opportunities. Implementing SAP financial and business intelligence solutions along with packaged fabricated metals manufacturing solutions from SAP can enhance operational and financial views, giving fabricated metals manufacturers unparalleled visibility into current realities and future possibilities.

SAP offers industry-specific, integrated business applications and services that allow metals companies to control manufacturing costs, collaborate with customers and partners, provide value-added products and services, and ultimately support more-profitable margins. From plant floor to back office

and from product development to service, SAP solutions work together to seamlessly support make-to-stock and make-to-order manufacturing models.

In direct response to the needs of midsize metals fabricators, SAP has developed preconfigured modular solutions that combine industry-specific functionality with support for industry-standard best practices for a fixed-scope implementation. This enables midsize metals fabricators to take advantage of the benefits offered by SAP with relative ease – leveraging the knowledge and experience SAP has gained from working with many of the world's leading metals manufacturers.

Whether using SAP Consulting or a global network of certified partners, midsize fabricated metals companies can implement SAP solutions quickly. In most cases, the SAP Best Practices for Fabricated Metals package helps manufacturers get the solution fully functional in as few as 12 to 24 weeks without putting critical business operations on hold.

VISIBILITY, COLLABORATION, AND ANALYTICS

PAVING THE WAY TO PROFITABILITY

For fabricated metals manufacturers, sustaining profitability is at the top of the business agenda. Manufacturers face a challenging business environment characterized by industry consolidation, increased competition, shrinking product life cycles, and thin margins – and most midsize metals manufacturers face these market realities with outdated information technology infrastructures.

The visibility provided by SAP software enables manufacturers to run production lines more smoothly, increase asset utilization, and reduce operational costs and lead times. It also supports collaboration with customers and suppliers, allowing manufacturers to satisfy customer demands and margin requirements consistently on an ongoing basis. And sophisticated built-in business analytics mean that metals products companies can constantly evaluate growth strategies, whether through acquisition or through expansion into new geographies or service lines.

With a comprehensive software solution from SAP, midsize metals manufacturers can ensure they have the technology in place today to support tomorrow's growth initiatives and profitability goals.

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