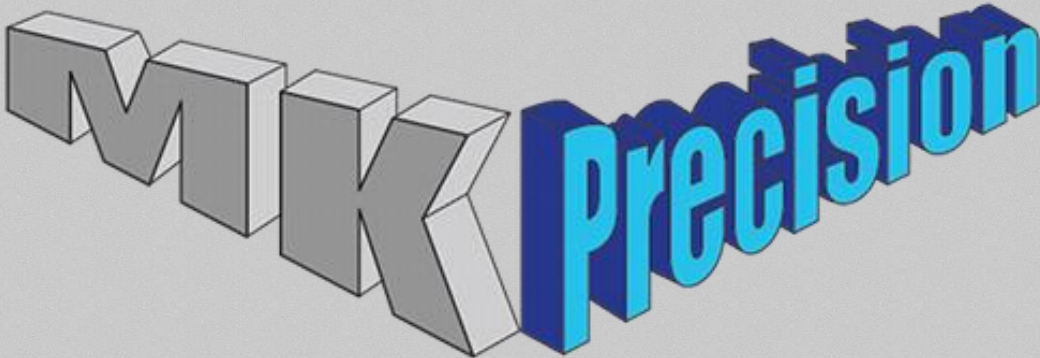


THE VITAL ROLE OF CONTRACT MANUFACTURING IN SUPPLY CHAIN MANAGEMENT AND OPTIMIZATION



Identifying the Challenges of Supply Chain Management

The supply chain is constantly evolving. In fact, this rapid nature of change impacts the varied facets of supply chain management for distributors and other companies that oversee the supply chain process. In order to deal with the evolving nature of different industries – medical, aerospace, defense, automotive, etc. – communication and visibility are essential. Because while time and cost will always be the two largest issues in supply chain management, the optimum method to cut down on those two factors is far from stagnant.

Take the medical industry, for instance. In the earliest days of supply chain management in the medical field, one of the most difficult aspects of finding the proper medical devices was finding a quality manufacturer nearby. Competition was limited as resources demanded that proximity to the medical facility was favorable. But today, competition isn't just local, statewide, or national. For many companies, competition is international. And as the facets of supply chain management have expanded, so too have the steps in the management checklist.

As with any chain, the supply chain is only as strong as the combined work of its links. When one link of the chain underperforms, the anticipated profit and schedule of the business that initiated the supply chain becomes compromised. **For this reason, it's vital for businesses or supply chain managers working for those businesses to verify the quality, timeliness, and cost-effectiveness of each link in the supply chain.**

Other challenges include:

- ✓ Acquiring high quality raw materials that are as exceptional as the distributor's ability to process, store, create and transport the final product to the end location
- ✓ Using metrics and data effectively to streamline the supply chain process
- ✓ Ensuring multi-party involvement common in all supply chains is leveraged for the best results

This last challenge indicates the importance of having the supply chain run like a well-oiled machine. When the first link of the supply chain (raw materials) completes its role effectively, the second link (supplier) has a better chance of completing its role effectively. This allows the third link (manufacturer) and subsequent links to follow suit, which leads to the cost-effective production and timely delivery of the final product.

To see how each link's performance determines the performance of subsequent links and the output of the final product, we'll take a closer look at the modern-day supply chain. We'll then show how a contract manufacturer like MK Precision can offer added value and quality to the supply chain while maintaining its fluidity.



An Overview of the Modern-Day Supply Chain

Raw Materials: The best way to think of raw materials is to think of the basic elements of a product. Take a spinal implant, for instance, commonly made from titanium alloy (MK Precision uses a titanium alloy called 6Al-4V ELI to make its spinal implants). Since titanium is rarely found in its pure form, minerals that contain titanium need to be obtained and the titanium needs to be extracted from them. Some of these minerals – also known as raw materials – include anatase, brookite, ilmenite, and rutile. Raw materials that the titanium is mixed with to create titanium alloy include aluminum, cobalt, tin and vanadium. *

Supplier: The supplier is the company that turns raw materials into materials that can be manipulated, molded, and shaped by the manufacturer. For a manufacturer that creates spinal implants, the supplier is the company that mixes titanium with other raw materials to make titanium alloy.

Manufacturer: This key component of the supply chain is what makes today's supply chain modern, economical, and highly effective. Today, unlike traditional manufacturers that create nearly every aspect of an end product, contract manufacturers like MK Precision are leveraged to make every piece of a product truly exceptional.

Contract manufacturers often specialize in one specific area, which makes them the best at what they do. Because they have a specific type of manufacturing down to a science, they're able to offer quality, scalability, technology and cost-savings that are often unrivaled by in-house manufacturers.

Distributor: The distributor is responsible for getting the product to the customer who initially asked for the product. Whether the product is patented by the customer or available for widespread sale, the distributor's mission always remains the same: deliver the product on time in its original condition so the customer can satisfy the needs and desires of its consumers.

Customer: The customer is the company that requests the product and sells it. For spinal implants, the customer is a medical device company.

This is also the part in the supply chain where the role of an outsourced supply chain manager typically reaches an end. Unlike an in-house supply chain manager that often helps market the final product to the consumer, the main objective of a contracted manager is to get the final product to the customer on time, in impeccable condition.

Consumer: The consumer buys the product and puts it to use. Medical facilities and the doctors within them ultimately use the spinal implant and, in this instance, are the consumers.

The Role of the Contract Manufacturer in the Supply Chain

Contract manufacturing, also known as outsource manufacturing, is a type of manufacturing in which a company relies on the skills of specialist manufacturers to produce one or more components of a final product. Ultimately, the supply chain manager or main manufacturer is in charge of bringing the different components made by contract manufacturers together and preparing a final product for delivery. Because contract manufacturers often don't play a role in the manufacture of an *entire* product and only need to focus on *one* area, an awesome degree of cost-effectiveness and scalability is achieved.

In addition to offering impressive scalability and cost-effectiveness, contract manufacturers also leverage the latest, most advanced technology. This technology can be found in the materials that make up the manufactured product, the equipment used to manipulate different materials, and the skills acquired and used by workers on the ground level. For instance, MK Precision makes use of high grade materials, state-of-the-art machinery, and innovative team-oriented services to deliver everything from spinal implants, pedicle screw systems, implant-grade PEEK spacers, and other medical devices.

As you'll discover in the following section, contract manufacturing heavily impacts time and cost, but there are also other areas impacted that are seen as either clear-cut advantages or potential risks.

Advantages:

Advanced Skills:

Because contract manufacturers are specialized, they focus on honing a specific set of skills. And once those skills are honed to the fullest extent, contract manufacturers utilize those skills and develop them further. This creates a level of expertise unmatched by full-scale manufacturers.

Focus: Unless a special client requests something previously unoffered by the contract manufacturer, the manufacturer rarely steps out of the niche it's loyal to. This allows for an intense level of focus that results in high output, high quality, and reduced cost.

Dependability: Companies know they can rely on contract manufacturers years down the road to deliver products designed with the latest materials and technology. This dependability is hard to come by with full-scale manufacturers.

Identifying risks like these is an important step in choosing a reliable contract manufacturer. When you know the potential risks involved with contract manufacturing, you know what kind of questions to ask and what kind of assurances to look for. Knowing the clear-cut advantages and potential risks associated with contract manufacturing will lead you to an effective outsourced partner that can successfully fulfill the role of contract manufacturer.

Risks:

Lack of Control:

There's one distinct advantage full-scale manufacturing has over contract manufacturing – control. For the former type of manufacturing, the manufacturer in charge of delivering the final product can control every aspect of production; for the latter type of manufacturing, the manufacturer that puts together the final product lacks control. The component outsourced to the contract manufacturer is received when it's received.

Lack of Precedence:

Manufacturers in charge of final product delivery often worry that the outsource manufacturer will put needs of other clients before its own.

Contract Manufacturing: Time and Cost Savings

Companies that rely on contract manufacturing in the supply chain process all agree that this type of outsourcing frees up time for the company to do what it's best at accomplishing. Whether that means putting pieces of a design together to build a deliverable product or marketing the product that's outsourced, contract manufacturing gives companies time they would have otherwise spent on in-house manufacturing operations, training employees, and obtaining necessary certifications.

One seasoned businessperson who has experienced the time-related advantages of contract manufacturing is Laurel Delaney, an export manager who worked for a small manufacturing company in the eighties. According to Delaney, outsourcing manufacturing tasks allowed her company to focus on marketing and selling – areas referred to by Delaney as the company's core competencies. After identifying the advantages and risks of contract manufacturing and finding the right contractor, the company reached new heights with a small staff.

*Within three years, we were able to achieve U.S. \$4 million in sales, sell to 27 countries, and generate more than 33 percent of our overall business overseas. We did all that with only four people on staff: a general manager, myself (export manager), a bookkeeper and an administrative assistant.**

Because reliable contract manufacturers are specialists in one key area, they're always aware of the latest trends, regulations, and technology in all the industries they serve. Whenever they can optimize the manufacturing process, they do; and whenever they see an opportunity to save time and increase efficiency, they take it. This is how Delaney and her company were able to reach a new level of success. Not only did the contract manufacturer save the company time directly, but the contract manufacturer also kept the company safe by automatically following new industry standards and optimizing processes whenever possible.



One of these standards that many contract manufacturers in the healthcare industry had to follow were the GS1 standards.

The GS1 standards put in place by the healthcare industry are proven to save time and eliminate variables that slowed down processes. GS1 standards were put in place to enable automatic identification, traceability and data synchronization in all medical device orders. The global nature of the supply chain brought the need for global standards. Compliance with the given standards ensured that the ever-changing legal requirements regarding the integrity and traceability of medical equipment were met. The barcodes utilized by this system acted as a code that is understandable in any language. No matter where products move from around the world, those that follow GS1 guidelines are easily interpreted.*

When these standards were introduced, contract manufacturers took steps to remain efficient in the evolved industry. Following these standards and implementing them is just one way contract manufacturers in the industry saved their clients time and increased client earnings.



In addition to helping clients *earn* more, contract manufacturers also help clients *save* more. These savings ripple outward to the distribution, customer, and consumer areas of the supply chain and, in effect, make the end product less costly and more appealing to the target market. The reason contract manufacturing is growing at an estimated rate of 10% per year* is because these manufacturers are able to pass on savings to their clients, similar to how their clients pass on savings to their customers.

One of the major factors of cost-savings in contract manufacturing is economies of scale. Because outsourced manufacturers commonly have more than one client they make similar products for, they're able to order mass quantities of materials from suppliers and save their clients capital in the process. Something strange to think about is how each of these clients – often competitors – work with each other in a way that makes lower manufacturing costs possible.

Clients of outsourcers are able to save money thanks to economies of scale, but, at the same time, never have to worry about the integrity of their outsourced product being compromised. Certified facilities like MK Precision guarantee this.

Contract Manufacturing: Finding the Right Contract Manufacturer

The right contract manufacturer, first and foremost, is one that you can trust. But how do you know if you can trust a contract manufacturer you've never worked with?

By focusing on three key areas – transparency, technology, and turnaround – you'll ask the right questions and request the information needed to help you make a strong, calculated decision. Focusing on these areas, also known as the *Three T's*, will lead you to a long-lasting relationship with a dependable contract manufacturer that delivers the highest quality product at the lowest cost.

The Three T's

Transparency

Out-of-house manufacturing doesn't mean you can't have *in-house-like* visibility. A contract manufacturer worthy of consideration will offer – and even encourage you to request – status reports, quality reports, real-time updates and more.

Lesli Stasiek, Global Manager at BioConvergence LLC states:

*You should not only have access to all data and information regarding your product, but you should also be able to retrieve that information from your [contract manufacturer] at any time. Whether it be the results of an assay, confirmation of a shipment, or real-time storage temperature data for your product, it should be an email or a phone call away.**

Technology

Suppose you're managing the supply chain for a medical equipment company and need a reliable outsourcer to manufacture a spinal implant. Because the implant requires extreme precision and allows no room for error, the outsourcer must have the latest, most advanced medical equipment. The [equipment required in this instance](#) includes state-of-the-art CNC machining centers that are Swiss-made.

All technology used in a manufacturing facility must also have [registrations and certifications](#) to ensure advanced equipment is leveraged correctly. For a medical device manufacturer that makes medical equipment like spinal implants, FDA and ITAR registrations are vital, as well as ISO 9001:2008 and ISO 13485:2003 quality management certifications.

Turnaround

One of the risks of contract manufacturing mentioned in one of the previous sections was *lack of precedence*. Because contract manufacturers often have more than one client in a given industry, it's important to ask what kind of turnaround system the outsourcer uses to meet deadlines.

For instance, are orders completed on a first-come, first-served basis (not ideal), or does the outsourcer have a sufficient amount of advanced equipment and qualified team members to meet the needs of multiple clients at once (ideal)? Find the latter type of outsourcer and turnaround times will never be an issue.

Conclusion

Regardless of the type of supply chain you manage, the contract manufacturer you choose should have superior qualifications, technologically advanced systems, exceptional customer service, and promises related to the timely delivery of high quality products.

At MK Precision, we deliver world-class, custom manufacturing of medical devices through experienced engineers, CNC machinists and dedicated quality control personnel who scrutinize each phase of development using the best technology available.

We believe strongly in the idea that the collaborative efforts are paramount to success. With attention to detail, expert staff and world-class technology, we tackle the challenges of supply chain management in various industries and continue to offer exceptional products.

Whether you're part of the medical, aerospace, defense, or automotive sector, [contact MK Precision today](#) to learn how we can streamline your supply chain and produce a truly exceptional product.

