

# Growth and Diversification through Vertical Integration

Finishers often choose to diversify to retain customers, increase sales and attract new customers. While most shops have traditionally diversified through horizontal integration, some shops are now diversifying through vertical integration . . .

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**R**unning a finishing job shop is a tough business. On top of dealing with the myriad technical challenges of the shop's finishing process, shop owners must also contend with numerous environmental regulations, safety requirements, competition from new technologies and price pressures. These challenges can consume much of an owner's time, preventing him from focusing on probably his most important task—customer retention and increasing sales.

Until recently, owners primarily achieved their goals of customer retention and increased sales through direct sales and limited marketing of the one finishing process the shop offered. By combining the sales and marketing efforts with high-quality service, some shops were able to grow their business.

However, in the last 5 to 10 years, job shops have been forced to develop broader business strategies to achieve their goals of customer retention and increased sales. By adding additional processes to their repertoire, finishing shops have been able to increase the value they provide to their customers.

Typically, the type of diversification pursued by most finishers could be termed horizontal integration. What does this mean? Essentially, horizontal integration is the acquisition of competing companies or technologies at the same level of production currently performed at the shop. Classic examples of horizontal integration include a painting shop adding a powder coating line or an anodizing shop adding a few plating tanks. Horizontal integration even includes

a plating shop adding a powder coating line or vice versa.

Horizontal integration is often a natural and appropriate route to customer retention and increased sales because it relies on the shop's current knowledge base and resources. A shop's current staff is likely to be capable of understanding and implementing the new horizontal process without much training or expense. Also, the addition of a similar process can share the resources of the shop's existing production, administration and marketing capabilities.

While horizontal integration can significantly increase a shop's sales if properly implemented, there can be some limitations to the adoption of horizontal technologies. Too often, horizontal technologies are added because an owner hears stories of success concerning similar or competing technologies, leading the owner to believe that the grass is greener on the other side. Without the proper planning, the new horizontal technology can undermine the hard work invested in the company's original finishing process by simply shifting business from the existing process to the new process. (There are times when this can be a desired outcome, such as when a shop is in danger of losing business in the existing process to a provider of a horizontal technology.) This, of course, defeats the owner's original intent—customer retention and increased sales—of adding the horizontal technology in the first place.

Horizontal integration is not the only avenue to diversification though. Some shops are now practicing vertical integration to achieve their desired growth. Vertical integration is achieved when a shop acquires

companies or technologies involved in different levels of production of the same part.

How does vertical integration work?

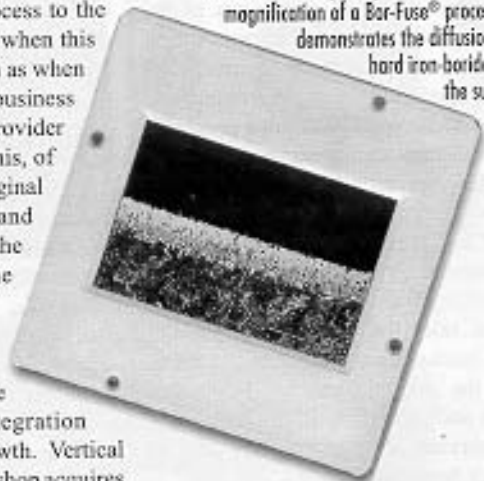
The first step of vertical integration is to find out exactly what happens to a customer's parts before and after they are processed in your shop. A good question to ask is are there other finishing related operations being performed on the parts by another vendor or by the customer itself?

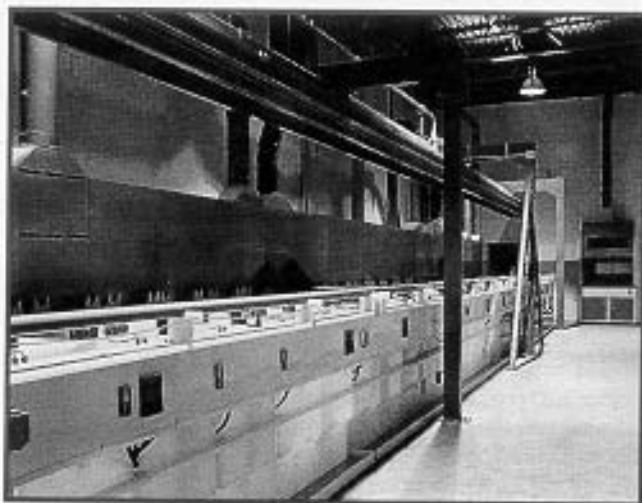
Next, determine if the customer would be interested in having your shop perform these other operations as well. If so, you can calculate the cost of developing the other process, the price at which you can perform the other process and the benefits that this vertical integration will provide you and your customer.

Vertical integration can provide your customer with a number of benefits:

1. The cost of processing and shipping the

This cross-section photograph at 100X magnification of a Bar-Fuse® processed part demonstrates the diffusion of a super hard iron-boride layer into the substrate.





An electroless nickel and Deburr® 1000 processing line at STI

part is lower when subsequent processes are consolidated in one facility.

2. Turnaround time is inherently less when processes are vertically integrated.
3. One-stop-shopping provides substantial logistical efficiencies, including shipping coordination and packaging.
4. A reduction of vendors decreases administrative requirements in accounting and quality systems management.
5. Concentration of the responsibility for the quality to one vendor means no finger pointing between vendors, less repetitive handling and less chance of damaged or lost parts.

For finishing shops, vertical integration isn't just about getting more work in the door; it's about doing more work on parts that are already in the shop. There are other benefits for job shops that practice vertical integration:

1. The increased value to the customer will lead to business retention and referrals.
2. By working on more levels of the production cycle, shops can more efficiently schedule subsequent processing.
3. By controlling more stages of production, shops have more control of the overall quality.

4. New vertical technologies provide an opportunity to attract new customers.

5. Customers of new vertical technologies can be exposed to the shop's traditional processes.

One shop performing vertical integration is Surface Technology, Inc. (STI; Trenton, NJ), a high-end plating shop that specializes in composite electroless nickel plating. STI's traditional processes include composite electroless nickel with materials ranging from diamond or silicon carbide for wear resistance to boron nitride or Teflon® for lubricity as well as a full line of conventional electroless nickel baths.


In order to retain customers and increase sales, STI thoroughly investigates the broader uses and requirements of its customers' parts. Since the shop's coatings are functional in nature, the first step is to ascertain the application in which the parts are used. From there, STI works closely with its customers to learn what processes are performed on the parts before and after it coats them.

Using this approach with one customer, STI established that before certain high-wear steel parts were sent to the shop for its electroless nickel composite diamond coating, the steel was hardened. The finishing shop subsequently invested time and resources in developing its BorFuse® hardening process. The hardening process diffuses a hard boron material below the surface of steel parts to achieve a hardness of 2,000 Vickers (about 84-86 Rc) in the steel to a depth of 0.005 inch. The implementation of this vertical technology has allowed STI to help its customer eliminate one vendor in its product manufacturing cycle. The total processing time has been reduced because parts that are processed in STI's hardening department are immediately scheduled for subsequent coating. Also, the quality of the parts has been enhanced because the finisher is able to ensure the work of one process is done with consideration for the surface requirements of the subsequent process.

With another customer, the job shop determined that high-precision parts from one of its customers were being deburred and polished by another vendor prior to coating. STI used its expertise in electroless chemical processes to develop Deburr 1000®, a chemical deburring and polishing system for steel. The cleaning process required for parts prior to the chemical deburring and polishing system is essentially the same as a conventional electroless nickel pretreatment cycle. To add the chemical deburring and polishing system to its primary plating line, therefore, required the addition of only two tanks, one for the chemistry and one for the dedicated rinse tank. Parts that previously had to be sent to two vendors for distinct processes (involving two round trip shipments, two invoices, packed, unpacked and handled twice, etc.) are now processed

in one combined cycle at the finisher's facility. The time and cost savings to the customer are substantial.

The company has also found ways to integrate new post plating processes to satisfy customer requirements. When it learned that a customer was sending parts with a composite electroless nickel coating to be polished at another facility, STI developed the know-how for a mass finishing technique to meet the customer's requirements. Having the parts handled by two companies led to finger pointing between the finisher and the polisher when damage or irregularities arose. STI realized that it would be better to take full responsibility for the quality and integrity of the parts while saving the customer time, money and administrative effort.

Each of these examples demonstrates benefits to the customer provided by vertical integration at the finishing job shop. But, the benefits to the finisher are also significant. First and foremost, STI has retained and increased business with existing customers. Its customers have an even greater reason to view STI as an innovative partner with shared interests in mind. Plus, STI has used its vertical integration technologies to attract a new array of customers. The first way the shop does this is buy marketing and selling its new vertical integration technologies to other finishers who want to use them. The second is by offering customers of STI's vertical integration technologies its traditional services as well. 

## MORE INFORMATION?

On hardening or chemical deburring and polishing processes

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