Do You Have Control Of Your Learning Curve?

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Is your company's learning curve with new technologies keeping pace with your customer's expectations and the requirements that are necessary to compete in the global economy?

We are now four years into the changes wrought by the regulatory acronyms of RoHS, ELV and WEEE and more recently the domestic chromium PEL rule. In spite of the time that has transpired since the advent of these regulations, many metal finishing companies are still behind the curve.

For those finishers who have not yet designed RoHS, ELV, WEE and Chromium PEL compliant processes, the future doesn't get any easier. Many of us expect that these regulations are the beginning of what will be more and more policy changes that will affect our industry. It's no secret that many countries want to put forth, as a minimum, the perception that they are reducing their environmental footprint.

Between the globalization of manufacturing and the movement towards everything green, (except, of course, the green needed to pay for compliance) the regulations will continue to filter down and become the standard for all customers of surface finishing. Whether or not metal finishing customers are required to comply, the pressure on those finishers that provide compliant finishes will result in decreased capacity available for hexavalent and other restricted finishes. This will dictate that customers that have not been required to convert to this point will to have to transition in the future by default.

While some may expect compliance with new regulations to be as easy as turning a switch, those of us in the trenches know better.

The point of this column is that, regardless of how easy a "simple" change in chemistry might seem to someone naive to the complexity of metal finishing, the finisher cannot afford to underestimate the inevitable learning curve that goes along with bringing new processes on line. As an illustration, let me share my experience in

our company's change to RoHS compliant chemistries.

To begin, there are reasons that hexavalent chromium and other restricted components were used for so long without being replaced. They were typically simple to control, inexpensive to operate and our industry was full of people who were familiar with how to make hexavalent chromium-containing products work their magic.

Most important, hexavalent chromates flat out worked. So long as the substrate was coated in the hex color of choice, it was almost a given that the finish would pass the customer's corrosion specifications. Unfortunately, meeting the same level of performance with a non-hexavalent chromate wasn't as simple as just switching from an existing hexavalent chemistry over to the replacement and dropping it into your tank to meet a customer's specification.

Because our largest customers were global and thus directly affected by the European directives, the company which I serve as the Technical Services Manager was an early adopter of hexavalent replacement technologies for zinc plating and chromate conversions on zinc and aluminum substrates.

Literally overnight some of our customers switched from a world of color, to clear. While the switch happened overnight, from a technical standpoint the process of making the change was anything but rapid. Some examples of the steps we were required to take are the following:

- We determined that colored hexavalent chromate provided some cover for visual defects when parts were not completely clean. The new clear color highlighted everything. Thus the cleaners had to be reevaluated.

- The tank in which the new chromate was to be installed had to be upgraded to handle the more corrosive nature of the products.

- New equipment was procured to monitor additional bath parameters that were absolutely essential in controlling the chemistry solutions, including pH, concentration and contaminant levels.

- Extensive corrosion testing of sample coupons and parts was conducted in our facility, by our customers and by independent laboratories. And that was only for the clear chromate over zinc plating! We also had to qualify black chromate, all of our dyes, conversion coatings for aluminum and zinc die-castings and tin-cobalt (our alternative to decorative hexavalent chromium). All of this required an absolute commitment to providing the necessary personnel and equipment resources to maintain and monitor these processes as was required.

- Training and documentation became a focal point to ensure that our employees understood what their responsibilities where when operating with the new processes. Old habits could not continue if we were going to be successful. Then the process and all of the training was documented per our ISO 9001:2000 quality management system to maintain consistency with the finishes we were providing our customers.

- Since many of our customers had been receiving yellow chromated parts for decades, they had to be educated as to what was a good part from a visual standpoint.

We pride ourselves in being pretty good at implementing new processes, but we gained some valuable insight about our learning curve along the way.

Granted, some of the hexavalent replacement learning curve has been reduced since we converted thanks in large part to those metal finishing companies that were on the cutting edge of integrating these new technologies.

These advantages however, are offset somewhat by the fact that those finishers converting now are doing so after the explosion in zinc and nickel prices that increased the cost of extensive trial and error in process development. Also, with the number of finishers who can meet the new regulations increasing every day, customers may not wait for the finisher to complete the testing of a compliant finish and may instead opt for moving work to a finisher who already has the learning curve behind him.

Obviously, metal finishers who have mastered the conversion to hex-chromium-free alternatives now have a great advantage over their competitors when it comes to winning new business.

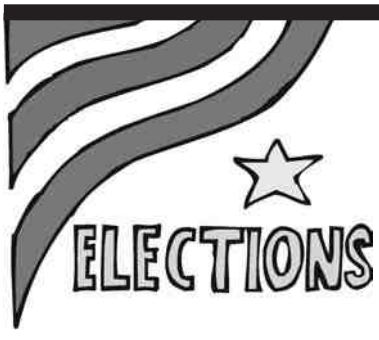
Compressing your learning curve will leave you ahead of the competition when the time comes to implement new finishing technology and deliver new value to customers.

One of the ways I have worked to shorten my learning curve is by taking advantage of educational opportunities available through the CEF program that is offered by the NASF and AESF Foundation. I also regularly attend our local AESF branch meetings to tap into the knowledge of speakers, suppliers and industry colleagues.

Certainly there are countless other methods to reduce your learning curve. Whichever methods you chose, control your learning curve and watch your RFQ's and new orders pour in. *P&SF*

Answers to I.Q. Quiz #432

1. Aqua regia is a mixture of concentrated nitric and hydrochloric acids. The "regia," or royal name comes from the fact that it dissolves noble metals, including gold and platinum.
2. Muriatic acid is hydrochloric acid. In the Middle Ages it was known as "spirit of salt," and *muriatic* means "pertaining to brine or salt."
3. Sal ammoniac is ammonium chloride. It is derived from the Greek "salt of Ammon."
4. Aqua fortis is nitric acid. The term is Latin for "strong water."
5. Oil of vitriol is sulfuric acid. The word vitriol derives from the Latin vitreus, or "glass." The glassy appearance of the sulfate salts used to produce the acid was the connection.



It is not too early to start thinking about your 2007 NASF Election!

TIMELINE FOR 2007 NASF ELECTIONS

July 15	BOD shall determine the number of seats for which each Council shall be entitled to make nominations in the next election
August 13	NASF Annual Board of Directors Meeting in Cleveland
August 20	Slate of nominees to be determined by each Council and approved by BOD
September 15	Slate of nominees (bios, pictures, etc.) to be submitted to *P&SF* for inclusion in the October issue
October 15	Election - mail ballots for voting on the NASF Board to all members with a deadline of returning the ballots by November 15
November 23	Votes tallied and new NASF Board members announced (put in January *P&SF*)