

Wire Harness Business & Strategy

A Three-Decade Perspective on the Wire Harness Industry: Continuity and Change

With more than 30 years of involvement in the wire harness industry, I've observed how its landscape has changed and, perhaps more intriguing, the several ways it has remained the same.

The outer profile of the wire harness industry today is almost indistinguishable from the way it appeared more than 30 years ago when I entered the business. It is still composed of over 1000 small harness manufacturers serving niche markets, a few dozen medium-size companies and only a handful of large companies serving very high-volume markets.

Moreover, the fundamentals remain unchanged. Wire harness manufacturers are still converters of customer designs, engaged in a labor and material-intensive business, using components specified by customers who regularly exercise substantial leverage.

And because many wire harness manufacturers are also in other businesses such as PC board assembly, box build and distribution, typical analyses (e.g., SIC codes) do not pierce through the outer profile to provide a precise picture of the industry—which I will attempt to do here.

Heightened Service Demands

One change, though gradual, has led to what are now quite challenging customer expectations. Performance standards (quality, delivery, engineering support) have tightened over the years, even though wire harness customers want to deal with fewer vendors—or just one. Several decades ago, customers measured their wire harness vendors by defects per thousand, but today demand a zero-defect wire harness. Meanwhile, delivery windows have gone from weeks to days, and many users now require their harness vendors to have a CAD/CAM design capability to enable a co-design effort.

Profitability Model

So are the wire harness providers operating under these challenging standards fairly rewarded? The good news is yes. Many companies I am familiar with generate a bottom line on the high end of the spectrum for manufacturing companies because they con-

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sistently deliver exceptional performance (the chief factors distinguishing those manufacturers, management competence and culture, will both be subjects of future columns).

Geographic Shifts

Several decades ago, it was predicted that all USA harness manufacturing would move to Mexico, leading to industry consolidation. Neither has happened. A significant amount of wire harness manufacturing still takes place in the USA, and the industry is still very fragmented. Diverse factors such as lead times, order sizes, frequency of revisions, cycle times, shipping times, shipping costs, work force training and inventory levels are some of the influences that can spark a move to a low-cost labor market or away from one.

An example of the fluidity is the instance of a wire harness customer undergoing a management change in purchasing, which leads to an analysis projecting huge savings by moving wire harness sourcing to a low-cost labor market. Then the next regime performs a similar analysis that refutes the savings, prompting a move in harness sourcing back to the USA.

China is also in the mix. But whether the grass seems greener there, in Mexico or in some other promising locale, the back-and-forth continues, consistently—up to now—with a healthy number of wire harness manufacturers based here.

Customer Relationships

Another constant in the industry has been the high level of mutual reliance between wire harness suppliers and their customers. Even as engineering, delivery and overall quality standards have tightened—and as users have adopted best practice models for their vendor relationships—the degree to which harness users value the relationships they have with their harness suppliers has generally risen. This has been particularly true when manufacturers are involved in the initial design of harnesses, an increasingly common arrangement.

Of course, there will always be harness users with

limited loyalty and a propensity to move business, but the percentage of fickle customers seems to be shrinking.

Component Availability

Once upon a time, wire harness manufacturers almost exclusively bought their components from the manufacturers of those components, with the high cost of obtaining them from distributors making that option for emergencies only. But as harness components have become available from distributors at a competitive price, the change has solved what for many harness manufacturers was a nightmare: not being able to get reliable delivery from the supplier of a component specified by the customer. The frustration was often compounded by the customer's lack of sympathy for the problem, making the wire harness manufacturer the fall guy.

Today, the wide availability of specified components from distributors at competitive prices has almost completely eliminated this headache, and it has virtually eliminated the cost of carrying extensive component inventories as "insurance".

Information Technology

Another boon for the manufacturer has been the relative affordability of computer hardware and the development of breakthrough software. Smaller wire harness manufacturers have especially benefited because these advances have made management control systems formerly available only to large companies now within their reach. The broad accessibility of IT has leveled the playing field.

As a case in point—and a look at the near future—consider software that enables a harness manufacturer to automatically convert a customer's electronic prints to a bill of material (BOM) and routings.

With some wire harness customers now using software that enables them to automate the harness design process, it's possible for the harness manufacturer to convert the customer's electronic print to BOMs and routings by using a software product (sometimes called middleware) that enables the conversion to occur instantly. This automates the front end of the wire harness manufacturing process.

Currently, this middleware is not commercially available from software providers, but most large and some medium harness manufacturers have created it on their own. Given the huge benefit that this middleware provides, I believe we will see it being made available to the entire industry before long.

Support Technology

The number and variety of companies with products and services developed specifically for the wire harness industry has grown exponentially over the last several decades.

In fact, the *Wire Processing and Technology Expo* this year had more than 160 exhibitors, many with useful technology for the harness industry that did not exist even a few years ago. This further enables smaller players to compete with much larger harness companies.

Bottom Line

The wire harness business is still very much a service business, composed of primarily small USA manufacturers, serving niche markets. In my opinion, the next few decades will not see consolidation on a major scale, but the number of wire harness manufacturers will diminish somewhat as wire harness customers continue to shrink their supplier bases in response to tightened performance criteria.

For those wire harness manufacturers who stay ahead of the technology curve, and who know how to take care of their customers, the future looks bright.

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Author & Company Profile...

Loren M Smith is CEO and sole shareholder of **Blue Valley Capital LLC**, a position he has held since 2001. From 1976 to 2001, he was CEO and majority shareholder of **MWC**, a manufacturer of electrical wire harness assemblies. During that period, by acquiring and integrating a number of mid-market wire harness manufacturers, MWC became the world's leading supplier of electrical wire harness assemblies serving the construction equipment industry. Loren eventually sold MWC to a private equity group.

As CEO of MWC and Blue Valley Capital, Loren has spearheaded the sale and purchase of dozens of mid-market (US\$2M-US\$75M) manufacturing companies.

Early in his career, he was with **Texas Instruments (TI)**, rising to general manager of TI's connector division. Smith earned a BS degree from **Miami University** in Oxford, OH, USA, and an MBA from **Northeastern University** in Boston, MA, USA.

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