

How High Mix Low Volume Outsourcing Makes High Profitability Sense

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Abstract

In many ways, high-mix, low-volume (HMLV) production is a quicksand that can lure manufacturers in without warning, increasingly ensnare them as they struggle to escape, and finally prove to be “fatal” – to the manufacturer’s productivity. Corporate consolidation, especially in the form of mergers and acquisitions, has contributed to an increasingly common situation where collective product offerings are “cobbled” together rather than carefully planned according to trends in market demand and available production resources. In addition to the growth in m&a, the customer demand for customized products is growing for business-to-business brands as much as among consumer products. As a result, production management faces a dilemma: either pay scant attention to HMLV product lines at the expense of lower productivity and a loss of cost control or dedicate an inordinate amount of resources toward the production of products with lagging market share and few prospects for growing into larger, more profitable volumes. This paper proposes a strategy for HMLV production that offers the best opportunity for improving productivity (and margins) while reducing management headaches. It suggests the benefits of utilizing outsourcing with suppliers that have embraced LEAN methodologies in manufacturing and possess the internal resources and temperament to manufacture HMLV products more efficiently than operations geared strictly for high-volume production. The paper closes by listing five qualifying characteristics that brands should look for in HMLV suppliers.

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Part One: Why HMLV Is “Quicksand” for Manufacturers’ Productivity



Vera Miles trapped in black-and-white jungle quicksand in *Tarzan's Hidden Jungle* (1955).

In black-and-white adventure movies from the 1940s and 1950s, especially those with jungle locales, quicksand was a frequent and deadly part of the action.

It was a wet, sandy muck that would gulp down intruders and could be walked into without warning. Try to fight it, and you would be drawn in even faster. It often proved to be a fitting end to an especially nasty villain.

Quicksand does exist in the real world though, as a natural phenomenon, an encounter with quicksand is rarely fatal. But the quicksand of the movies does have its deadly counterpart in business. In many ways, high-mix, low-volume (HMLV) production is a quicksand that can lure you in without warning, ensnare you more as you struggle to escape, and finally prove to be fatal – to a manufacturer's productivity.

Like the quicksand of the cinema, getting out of HMLV quicksand on your own is nearly impossible. In the movies, you would need a hero to pull you to safety with a grapevine or a rope.

When a manufacturer finds itself trapped by the escalating costs and limited options inherent in managing HMLV product lines, it too needs a hero to “save the day.” More and more, that hero involves outsourcing.

We'll look at the issue of HMLV production and outsourcing in two parts: **Part One** will examine why HMLV is a quicksand that manufacturers can easily fall into and why it is a trap that is so difficult for manufacturers to escape on their own.

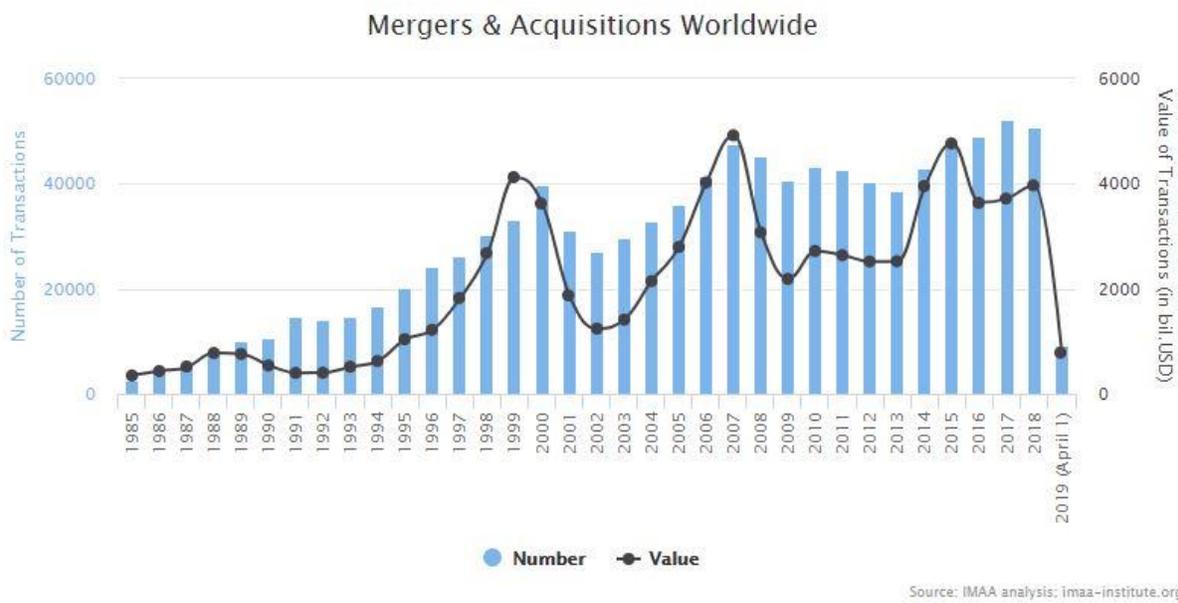
Part Two will examine why outsourcing can be a lifeline for improving the productivity and increasing the profitability of HMLV product lines. Part Two will also reveal the special criteria for choosing an HMLV outsourcing partner.

HMLV: An “acquired” condition

High-mix, low-volume products are often the lingering result of larger business decisions. In particular, mergers, acquisitions and other business consolidations may yield good financial news for shareholders. But often they bring new headaches for production managers who are left to deal with the HMLV products that have come along with the acquisition.

As companies consolidate, products proliferate. Low-volume product lines survive corporate consolidations to become the orphans that production managers don't really want but have to continue to support.

Over the last decade, consolidation has increased at an unparalleled rate among industrial manufacturers (Institute for Mergers, Acquisitions and Alliances, 2019). Industries particularly ripe for consolidation have included the automotive industry (Fiat and Chrysler, Nissan and Renault), the lighting industry (Eaton and Cooper Lighting), the agricultural equipment industry (Caterpillar and Bucyrus Mining) and numerous general industrial companies (Dow Chemical and DuPont, Dell and EMC).



Mergers and acquisitions have been a major part of global corporate growth strategy for more than four decades. The practice today is as prevalent ever and shows no signs of slowing. Schneider Electric has made 43 acquisitions over the last 20 years. During that same time frame, Eaton has made 39 acquisitions, Siemens has made 60 acquisitions and Emerson 43. In addition, the “growth through acquisition” mantra has not been limited to organizations that used to be designated “conglomerates.” Acuity brands, a corporate entity focused on lighting products, has completed eight separate acquisitions since 2010.

In many of these acquisitions, the company being purchased is absorbed into an existing division or operates as a stand-alone division for its new corporate parent. Likewise, newly acquired product lines must be assimilated, and it's most likely that the “new” products simply will be added to the parent company's existing offering rather than pruned and blended.

Consolidation leads to expansion (of products)

While manufacturers and brands have been focused on consolidating, the merger frenzy has resulted in just the opposite effect for products offerings. SKUs don't go away because companies and brands collide.

While some of the less desirable product lines may be sold off, rarely are products or components eliminated or replaced. Product lines are absorbed and carried by new owners even when they represent a diminishing share of the new companies' sales mix.

There is a reason why consolidation of companies does not result in a consolidation of product lines. In consumer markets, the trend is toward *more* customization. Nike offers shoes that are made-to-order and shipped within six weeks (Baines, 2019). Apple offers customized Macs and iPad products that feature special engraving (Apple, Inc., 2019). Burberry offers customized, embroidered bags and scarves (Herman, 2014).

In the automobile industry, product inflation not only means offering models with internal combustion, electric or hybrid engines, but also all the options that allow buyers to “feel” as if the new car is uniquely their own.

A similar attitude is shared by industrial buyers. They want what they want, and they don't want to be compromised (as they see it) by standardization. In the lighting industry, for example, that means products for municipal lighting include a range of special options (such as colors, sensors or security system add-ons). In electric distribution products, it means offering a range of color schemes on circuit breakers. It means offering a variety of sensor options on water and gas meters.

A problem that won't go away

Many components, in many different industries, continue to be in production two decades or more after their initial marketplace introduction. They should be eliminated as obsolete, but someone is still buying them.

Take, for example, the lighting industry: New LED components may be thoroughly replacing existing components, but old fixtures are hardly ever removed as obsolete. That increases the complications related to producing and managing lighting component SKU's and sustains low-volume products that become increasingly more difficult to produce and sell profitably.

A similar situation exists in the automotive aftermarket. Because 20-year-old cars are still running, 20-year-old replacement parts have to be available, even as demand dwindles to a minimum.

Generally speaking, advances in manufacturing have meant more reliability and longer wear in the components and end products that are being produced. That, combined with more impending consolidations in manufacturers and suppliers, means manufacturers won't be able to rid themselves of low-volume products.

They have to find a more profitable resolution to the growth in low-volume offerings. They have to find a more efficient means of producing and managing low-volume product lines.

Manufacturers and supply chain managers will have to think about the low-volume product challenge differently than they have in the past. Even today, for those responsible for managing their production and distribution, high-mix low-volume product lines are seen as a nuisance at best and, at worst, as a drain on resources, one that hurts a business unit's bottom line.

A trend that complicates product management

According to the Pareto principle (the "80/20" rule), most of what matters in anything will be concentrated in a small proportion of the whole. Thus, as a general (but nonetheless, surprisingly accurate) rule, 80 percent of your sales will be generated by 20 percent of your salesforce. Likewise, 80 percent of what industrial companies spend with suppliers will be concentrated with approximately 20 percent of its suppliers. That also means that 20 percent of what they spend is shared by the remaining suppliers. That's 80 percent of a manufacturer's suppliers fighting for 20 percent of the manufacturer's spend.

Easy to manage? About as easy as escaping quicksand.

One automotive Tier One supplier spends \$85-million annually for rubber products, distributed among 244 suppliers. Another industrial manufacturer spends \$110-million annually in die casting across 27 suppliers. Yet another utilizes 35 suppliers for only \$16-million in its iron casting spending.

With so many suppliers clamoring for relatively few dollars, how do managers stay current with what they are actually spending across so diverse a supplier roster? The fact is, they don't. On their own, they can't.

Many commodity managers don't know what is being spent corporate-wide, and there are several potential reasons why. Some of the recent acquisitions, used to working independently, are simply not very good at reporting up the corporate chain of command. Others may not be synced to a standard ERP system (Oracle, SAP, etc), making it difficult to track, measure, monitor and optimize spend. The components that make up a manufacturer's 20-percent spend group tend to be part of a fragmented supply chain solution, with a supplier base that's too frequently unresponsive, over-priced and very poor at meeting quality and delivery standards.

Why is it that these suppliers can get away with sub-standard performance? It's a matter of time – specifically the lack of it and where managers are compelled to prioritize their time. Most commodity, purchasing and supply chain managers are forced to spend the bulk of their available time on their high-volume, high-dollar spends. Issues related to low-volume products are pushed aside in favor of concentrating efforts and resources to address production and supply chain needs related to the most business-critical components and sub-assemblies.

However, the divisions and plants which rely on low-volume components still need them delivered on-time. They expect the components to meet their quality specifications. They expect good service. When low-volume suppliers fail to meet their customers' expectations for quality and delivery, supply chain executives are likely to find themselves pulled into managing these low-spend suppliers and SKUs, taking their time away from high-impact, high-dollar spend items and suppliers.

Manufacturers also struggle with forecasting and planning for HMLVs to ensure on-time delivery into their plants. Most high-volume component lines easily attract sufficient management focus and benefit from a streamlined, regularly updated supply chain plan.

High volumes attract bids from the most qualified suppliers. The size of the business and the dollars at risk mean that the work will be highly visible – and carefully monitored – by members of upper management for both the supplier and the end customer.

Low-volume components, on the other hand, tend to have comparatively little time, attention, and focus extended to them. Problems with quality and delivery are tolerated as nuisances that do not merit management time, leading to a continued deterioration in quality and delivery. In addition, low-volume suppliers have no compelling reason to be competitive in the prices and service they offer.

The need for dependable sources of high-mix, low-volume production continues to grow, while manufacturers have less and less time to monitor the performance of HMLV suppliers. With the rate of corporate consolidation continuing to increase, and with customers – even industrial customers – demanding some degree of customization, the need for HMLV production solutions will not go away, demanding either more of management's time or a growing tolerance for HMLV products that fall short in terms of quality and delivery, while their costs ratchet up.

How do manufacturing end users regain control of low-volume production and the HMLV supply chain? How do they escape the quicksand and put the process of managing HMLV production on firmer ground?

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Part Two: Getting Out of the HMLV Quicksand

In Part One, we examined the reasons why HMLV products are proliferating, driven by corporate consolidation, by customer demands for more choices and by the fact that manufactured goods are better made and performing longer, requiring manufacturers to continue to produce and offer replacement parts for obsolete models that are still in service.

We also demonstrated why HMLV products are the “quicksand” of manufacturing productivity. Companies, for the most part, can't do away with low-volume products because they remain in demand, regardless of how diminished over time that demand becomes. Because production and supply chain managers are effectively limited in the amount of time they can devote directly to HMLV suppliers, quality and delivery tend to suffer. Manufacturers stuck in the quicksand of having to offer HMLV products have no real options but to overpay for components of questionable consistency that may arrive on time.

It's difficult – sometimes impossible – to extract yourself from quicksand. The way to escape quicksand is not to thrash around fighting it. That's a strategy for sinking faster. The way out of the danger of quicksand is with someone else's help, someone beyond the edge of the quicksand pit who can throw you a rope and pull you to safety.

When that quicksand is HMLV production, the lifeline is outsourcing not just HMLV production, but also outsourcing the management of the HMLV suppliers.

A LEAN solution

One of the ways that manufacturers can enhance their management of an HMLV basket of components is to engage suppliers that implement LEAN methodologies in their manufacturing and supply chain processes. Just as is true for so many aspects of HMLV production management, finding suppliers who are willing to take on low-volume runs *and* subscribe to LEAN principles is easier said than done.

Many of the smaller suppliers that are inclined to take on high-variation, low-volume business are less inclined to commit to investing in LEAN. LEAN methodologies require significant process and cultural changes as well as unaccustomed patience on the part of executive management (Pearce and Pons, 2013). Small, privately owned suppliers

are less likely to look favorably on investments that come with short-term pain and long-term rewards. LEAN is not every company's "cup of tea" (Innov8rs, 2018).

In addition, many end customers are not as committed to a LEAN agenda in their own manufacturing plants as they would like to believe. That lack of full commitment makes enforcing LEAN among their suppliers even more challenging. Similarly, enforcing LEAN with HMLV suppliers, who receive only minimal (if any) attention from end-customer management, becomes practically impossible.

How does a manufacturer find those HMLV suppliers, and then manage them effectively, when there isn't enough time to do either? The answer: Turn to someone who already does.

How to find – and monitor – the right HMLV suppliers

The best way to deal with a basket of HMLV component suppliers involves four stages: research, planning, collaboration and a commitment to look at – and base decisions on – total costs. What follows are five considerations for selecting an HMLV supplier who is most likely to provide sustainable reliability and value.

1. The supplier's ability to be competitive on HMLV parts

Most suppliers know how to be profitable with low-variation, high-volume production. They would always prefer to set up the tools in the press and run them over a long period of time.

Generally, high-volume producers are not equipped or motivated to run different parts in smaller batches. The processes involved are more expensive and complicated than high-volume runs, and quality standards are more challenging to maintain.

Building an effective HMLV supply chain requires finding those suppliers who are interested in low-volume production and have the experience and technical setups to run smaller batches, while executing changeovers efficiently. HMLV proficiency may not be the norm among suppliers, particularly large, high-volume suppliers. However, it's possible to assemble a mix of suppliers that would be delighted to cater to the demanding requirements of producing HMLV components and still be profitable doing so.

2. The supplier's interest in HMLV parts – exclusively or as part of a mix

Many small suppliers are willing to take on the production of HMLV components with one important condition: they also want to be promised higher volume business to complement the HMLV work. That is not an outrageous condition. It is, in fact, one that can create a win-win relationship between the HMLV supplier and the end customer. Supply chain managers must be willing to engage with these suppliers, negotiate the mix and lay out the strategy where HMLV components are produced as part of a mix with steady-running parts – and without compromising on the quality or delivery.

3. Include consideration of vertically integrated suppliers

Suppliers that have in-house capabilities for the fabrication of tooling and even some equipment are often set up to handle HMLV component production. Their proven ability to make gages, tooling and fixtures quickly and at a lower cost makes them more likely to control their costs and deliver HMLV components at attractive prices.

4. Re-think supply chain planning

HMLV components are notoriously difficult to forecast. They also present difficult and special challenges in terms of packaging efficiency and shipping methods.

Standard analytical S&OP supply chain methods and processes do not work for HMLV components. HMLV components require flexible and responsive supply chain practices based on prompt goods consolidation.

For instance, small and lightweight HMLV components can be air freighted economically to reduce lead times. You simply cannot afford to rely on high-volume thinking when looking for economical expedencies in low-volume supply chain management.

5. Re-think what is meant by “standard processes”

Too often, managing HMLV components leads to operational and/or quality problems that can consume the operational team members. It doesn't have to be that way.

By relying on HMLV component suppliers who have a track record of long-term effectiveness, manufacturing and supply chain manager have a higher degree of

assurance that the components they need will be made to the quality desired and delivered as promised.

The solution is to rely exclusively on HMLV suppliers that incorporate LEAN methodologies, including advanced product quality planning (APQP) and other continuous improvement and project management tools. When LEAN drives the suppliers' production and supply chain practices, end customers can be more assured that the HMLV components they receive will be free of the kind of production and delivery compromises that are too often typical of suppliers who do not follow LEAN principles.

An outsourcing solution for enhanced HMLV management

Because HMLV components often represent 20 percent of a company's spend but 80 percent of its SKUs, they contribute a disproportionate amount of the quality and delivery issues that plague production and supply chain managers.

Since HMLV offerings will not be going away any time soon, manufacturers need to re-examine their approach to selecting and managing HMLV suppliers. They need a more focused, creative and flexible solution for discovering willing HMLV supplier partners who know how to ensure a smooth and reliable supply of components.

Companies understand the benefits of outsourcing non-core business functions and moving production off-shore to maximize quality and cost savings. Outsourcing management of HMLV suppliers offers comparable benefits. It expands the available pool of qualified, willing HMLV suppliers by adding overseas suppliers that are LEAN-compliant and experienced in high-variation production. It allows production and supply chain managers to focus on their core, high-volume product lines – the 20 percent of SKUs that contribute as much as 80 percent of the manufacturer's revenue.

Most importantly, by outsourcing the entire HMLV function – from selecting the most qualified suppliers to assuring on-time delivery – manufacturers can improve the productivity and profitability of the HMLV portion of their product offering. Relying on experts in HMLV outsourcing can rescue managers who have neither the time nor expertise to work effectively with HMLV suppliers.

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