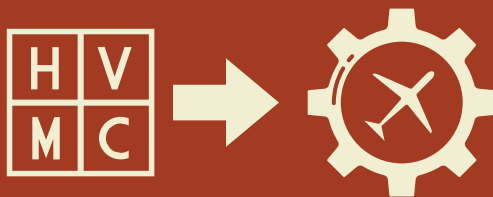


HIGH VALUE

MANUFACTURING



**Supporting Automotive, Aerospace,
and Defense Manufacturing**

**including Quality, Operational Improvement,
Program Launch, and Delivery Performance**

NOTES

Welcome! This booklet provides an overview of High Value Manufacturing services and capabilities to improve operational performance of Aerospace and Defense manufacturers. We invite you to use this page for notes, questions, or reflections about challenges and opportunities in your organization.

Lined area for taking notes, consisting of multiple horizontal lines.

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Aerospace and Defense Overview

Similar to the Automotive Industry, manufacturers in Aerospace and Defense rely on their suppliers' on-time delivery, product quality, and cost reductions.

The Automotive Industry has provided a roadmap, having been required to adapt to multiple challenges faced by OEMs and suppliers.

- Automakers are navigating the unpredictable evolution of Battery Electric Vehicles, Hybrids, and ICE Vehicles; Aerospace and Defense manufacturers are adapting to a harsher environment, fewer government contracts, and rising quality issues.



- Automotive, Aerospace, and Defense manufacturers share a commonality in processes, delivery and quality requirements, and cost control measures while simultaneously adhering to safety standards and striving for best practices.
- Increased competition in global markets has placed emphasis on manufacturing costs, emission issues, and fuel efficiency, especially within Aerospace.
- Automotive, Aerospace, and Defense manufacturers face parallel challenges within their supply bases, particularly the ability of those suppliers to meet expectations.
- The geopolitical environment – current wars and future potential conflicts – creates further uncertainty.
- Increased demand for highest quality products and lower costs requires that manufacturers produce more accurate products the first time.



- Aerospace and Defense manufacturers face strong certification and compliance requirements, while Automakers take a slightly less formal approach with a significant focus on compliance and regulations.



Aerospace and Defense manufacturers face a variety of unique challenges, both internally and externally. They continuously work to build sustainable supply chains for sourcing complex and custom-designed components that require long lead times for rigorous quality control processes. They are governed by some of the most stringent regulations and standards in any industry related to safety, reliability, and performance standards.

The 2023 U.S. Defense Budget was \$829 billion, representing the incredible value in supporting national security and the companies that make it possible.



**With improved operational performance,
could your manufacturing company
increase profitability and efficiency?**

High Value Manufacturing deploys highly experienced, highly skilled resources in manufacturing facilities that require specialized knowledge or skillsets.

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Value Proposition

High Value Manufacturing has been providing highly experienced, skilled contractors to support new plant or new product launches, delivering quality process improvements for 10 years. By utilizing HVM contract resources, clients have realized savings in many ways:

REDUCED HEADCOUNT BY A FACTOR OF 2.5:1

- **30+ years experience** vs 2–7 years experience
- **Multi-skilled** vs singular-skilled workers
- **Flexible work hours** vs fulltime requirements

SHORTER LAUNCH TIME

NO “SUPERVISORY” RESOURCES REQUIRED

HVM supports manufacturers in Automotive, Aerospace, and Defense. We have many additional available contractors to support multiple programs simultaneously.

In the following cost comparison table, HVM staffing scenario estimates up to a 63% lower project launch costs than typically planned by OEMs or their suppliers.



Example of Program Staffing Comparison OEM vs HVM

Relative cost comparison to launch a single module in a manufacturing facility

	OEM with Minimal Experienced Team Members	Contractor A	Contractor B (HVM)
Average Experience of Launch Team Members	2 years	7 years	30+ years
Scenario Description	OEM utilizes minimally experienced local employees. Requires close supervision.	Contractor utilizes medium-experienced level local contractors. Requires some supervision.	Contractor utilizes highly experienced, skilled contractors. Requires no supervision.
Estimated Number of Team Members required	5.0	4.0	2.0
Hourly Cost Factor	0.8X	1.2X	1.75X
Supervisory Ratio Required	0.2X	0.1X	0.0X
Straight Time Hours Per Week	40	40	50
Overtime Hours Per Week	20	20	10
Overtime Cost Factor	1.5X	1.5X	1.25X
Total Launch Project Estimated Weekly Cost Factor	350	328	200
Estimated Length of Project (Weeks)	39	35	35
Total Estimated Staffing Cost to Launch Project-X including Management Fees	13,650	11,480	8,012

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Core Areas of Focus

Our Commitment:

We aim to create long-term growth for our clients with high-value manufacturing solutions, by employing world class manufacturing experts passionate about helping peer manufacturers build quality products while increasing profits. Our values drive our desire to provide exceptional, unmatched value in every client project. They shape the culture of our company and serve as a baseline for how we operate.

OEMs and Suppliers

High Value Manufacturing works with OEMs & Tier 1/2/3 suppliers in Automotive, Aerospace, and Defense industries to increase productivity, cut costs, and generate cash to the bottom line.

We believe that manufacturing companies need to be lean and quick to change to thrive in today's global economy. Every client engagement centers around improvements that lead to increased profitability. Our team focuses on:

- **Producing the highest quality products**
 - Improving throughput
- **Maintaining cost effective operations**
 - Compliance to industry standards
 - Supply Chain Engagement

At HVM, our model is based on the 11+1 Quality Management Strategies, with short-term tasks that create immediate results. Our team applies a variety of tools and best practices to customize low-cost services that deliver value while achieving goals of an OEM client and/or their suppliers.

Compliance/Quality Support

Whether your company is looking to simplify internal processes, reduce manufacturing costs, or streamline supplier relationships, HVM has the know-how and experience to develop your path to compliance. Implementing a comprehensive path to compliance can eliminate crisis management, increase new business opportunities, enhance product quality, reduce waste, and improve overall efficiency.



On-Shoring & Plant Launch

HVM understands manufacturing operations and the value of supply chain resiliency. Migrating a company's operations closer to the customer may be the best solution for quickly meeting and servicing U.S. market needs. Relocating plant operations has the potential to reduce costs, improve efficiencies, and allow more flexibility for addressing supply chain issues.

Operational Assessments, Performance Improvements, and Stakeholder Support

HVM applies manufacturing expertise to a fine-tuned operational assessment protocol that quickly identifies causes of inefficiencies and opportunities to build value for the company.

HVM's Quick Value Tool goes beyond standard financial metrics to investigate manufacturing issues that impact profitability.

When adding a new product or plant through an acquisition, HVM is equipped to work with clients that are considering purchasing or selling a manufacturing facility. As part of due diligence, a company should always include a manufacturing operations assessment in the early stages of the acquisition process. Our team provides various manufacturing assessments to ensure a business transaction provides maximum value.



Skilled Labor Resources:

HVM's team of highly experienced, highly capable resources has a variety of specialized skills that are available to manufacturing clients at competitive rates. Our contractor resources have 30-plus years of manufacturing experience, primarily in the Automotive Industry and transferrable to Aerospace and Defense. HVM provides dedicated full-time contractors for short term or supplemental placements, as well as fractional coverage of jobs requiring less than 40 hours per week. HVM team members easily integrate into clients' existing teams and hit the ground running.

Our labor resources currently supporting Aerospace, Defense, and Automotive operations possess experience and knowledge including new program launch, equipment design & installation processes, debug, equipment qualification, problem solving & exceptional two-way communication.

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Experience & Qualifications

Cost, Value, and Risk Reduction (for OEMs)

As manufacturing and assembly operations scale to meet growing demand, manufacturers must focus on maintaining low operational costs and minimizing risk. They will be able to create value with efficient operations led by skilled manufacturing resources with knowledge of continuous improvement and compliance with industry standards. In growing market sectors, there must be a strategic (and well-documented) approach to process, design, quality, costs, learning, and continuous improvement.



Well-Integrated Product Design and Manufacturing Process Development Technique (for Supply Chain)

The complexity of product design poses a challenge to the manufacturing and product assembly processes. Notwithstanding the availability and limited sourcing of raw materials for manufacturing, seamless production throughput and acceptable product quality requires multiple learning cycles through documentation, testing, and process control measures.

HVM's resources are actively engaged in critical positions for PPAP, PFMEA, PCP, and FMEA+ applications within manufacturing or assembly facilities to skillfully integrate a "Design for Manufacturing" approach when working with manufacturing suppliers.



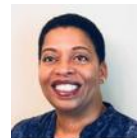


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HVM clients have reported that utilizing two (2) experienced HVM contractors is equivalent to five (5) less-experienced resources from other providers. HVM provides Supplemental Short-Term Resources to assist with specific project activities, including the following tasks, in part:

- Program/Project Management
- Process Engineering
- Industrial Engineering
- Manufacturing Management
- Plant Layout
- Capacity Planning
- Systems and Feasibility Studies



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Perspectives

Search the High Value Manufacturing blog at <https://highvaluemanufacturingconsulting.com/blog/> to learn about the expertise, philosophies, and qualifications of our highly experienced team of manufacturing professionals. The blog features personal stories from HVM leaders and team members about process improvements in action and lessons learned during lengthy careers on manufacturing plant floors. Among the complex, diverse topics in the blog library are:

PLANT LAUNCH PREPAREDNESS

Every member of the HVM leadership team has 25+ years of manufacturing experience that includes numerous new plant start-ups and new product launches. See *"Are you ready to launch?"* and *"What to look for in an automotive consulting firm"*.



OPERATIONAL ASSESSMENTS

HVM can perform a 3–5-day assessment of manufacturing operations to generate a "roadmap" on how to lower costs and improve profitability. See *"A Case for Outside Evaluation"* and *"Win-Win for Company & Investor"*.



LEAN MANUFACTURING

HVM understands the necessity of implementing lean manufacturing principles into operations and has the experience for immediate results. See *"Growing Up 5S"* and *"Do you fear manufacturing audits?"*



For examples of HVM projects in client facilities, review our Case Studies at: <https://highvaluemanufacturingconsulting.com/case-studies/>.

HIGHLY SKILLED LABOR RESOURCES

HVM's network of retired manufacturing professionals provides an array of specialized skills sets that may be a supplemental resource solution to keep production on schedule. See *"Specialized Skills to Meet Client Needs"* and *"Manufacturing's Best Solution for Staffing Challenges"*.



INVENTORY MANAGEMENT

There are best practices for inventory controls, but there are also unique and creative solutions that have proven successful. See *"Inventory Control: Where did it go?"* and *"Inventory Control: Did I get it?"*



SUPPLIER RELATIONSHIPS

If your company sources suppliers that are adversely impacting your business, HVM can provide direct inter-vention to quickly resolve issues and create a mutually beneficial working relationship through shared goals. See *"Whistling Past a Graveyard That Never Ends"* and *"Production Closer to the U.S. Customer"*.



QUALITY MANAGEMENT

HVM's approach to quality is understanding and demonstrating the segment of the client. This is based on working from the ground up of the supplier. It focuses on safety, reliability of products, while reducing costs and ensuring customer satisfaction.



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Meet the Experts



BILL MAY

founded HVM in 2014 to share his knowledge and experience with small-to-medium manufacturers and stakeholders who seek to improve operations and become more profitable. During his long career in manufacturing, Bill has worked with industry giants like General Motors and Ford, at facilities across the U.S. and internationally. As a manufacturing industry thought-leader, Bill has led the HVM Leadership Team to adapt to changes in the Manufacturing Sector, such as launching “HVM Resiliency Partners” to address supply chain issues impacting client facilities. Bill’s proprietary assessment tools and vast industry knowledge have led to countless client success stories of cost savings, efficiency gains, and quality improvements.

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PAT SMITH

With over 32 years of experience in an OEM automotive environment, Pat's focus is on achieving results through customer-oriented solutions and team-based problem solving. He thrives in high-pressure and fast-paced situations, strives for positive results through the application of his product knowledge and troubleshooting abilities. Pat has managed and held oversight to numerous program launches, quality management systems, scrap reduction initiatives, and supply chain engagement. These positions and projects served industry giants such as Ford, GM, FCA, Cummins and Mercury Marine, as well as numerous Tier 1 & 2 Suppliers.

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