

## Value Chains

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### What is High-Variety Manufacturing

What is High Variety Manufacturing (HVM)? Why is it important to define it? High-variety manufacturing is more than just a description of manufacturing processes; HVM is a **business model** that offers significant opportunities, but it also presents significant challenges. In order to take advantage of the opportunities and solve the challenges, it is necessary to recognize what HVM is and how it is reflected in your company.

A potentially bewildering range of acronyms and descriptors are variously used to describe marketing and manufacturing models that have a high degree of variability, variation, and variety:

- Mass customization
- BTO, build-to-order
- CTO, configure-to-order
- ETO, engineer-to-order
- ATO, assemble-to-order,
- HMLV, high-mix low-volume,
- Job shop
- Etc.

There is a problem, however, with lack of precision and definition with these terms and a limitation to the extent of a company's value chains that are described by them. I use the term high-variety manufacturing as an umbrella concept to cover all of these marketing and manufacturing models, framed by the critical idea that HVM is a business model that encompasses all of a company's value chains.

HVM is best-defined as a set of characteristics of which a manufacturer may exhibit any one or all.

- The sales process is complex and includes customer-driven design and configuration decisions.
- The products are highly configurable and the number of options and the configuration combinations are such that the demands for specific manufacturing routings, tasks, and materials can not be forecasted. The specific product and its manufacturing demands are not known until the order is received.
- The production value chain includes non-manufacturing activities such as project engineering; unique manufacturing documentation, such as drawings, generation; unique BOM determination; etc.
- The company's "product" is competencies rather than specific products. Examples are job shops and short-run or low-volume suppliers to OEMs.
- The company is a pure custom or project-based manufacturer.

So we return to the question of why it is important to define HVM. One of the most critical keys to success for implementation of any type business and process improvement initiative is alignment. That is, at a strategic and tactic level all business activities, from sales and marketing to product development and management to finance to production, are aligned with the business's objectives (and that those business objectives exist, of course). If, for instance, an initiative such as lean manufacturing does not recognize that project engineering and BOM and manufacturing documentation generation are part of the production value chain in HVM, the degree of success for that initiative is diminished.

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**Valent Group**, [www.valent-group.com](http://www.valent-group.com), a management consulting firm with an international clientele, works with high-variety manufacturers to maximize the competitive advantage and profitability available in the operations value chain. To address the complexity of the high-variety manufacturing value chain, which mirrors the variety and variability of the products, Valent Group uses a structured approach to develop the essential strategies and tactics.

Questions or comments? Email us at: [services@valent-group.com](mailto:services@valent-group.com)

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