

### mass customization

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Mass Customization is an operational strategy focused on inducing velocity and flexibility in a make-to-order production process, with the capability of producing at a minimum, a quantity of one, or large quantities with minimal changeovers and interruptions. Mass Customization products compete directly with standard products, providing a company a competitive edge by having the capability to manufacture specialized or custom products at the speed, volume, cost, and quality as standard products.

Mass Customization combines the principles of Lean Manufacturing and Synchronous Manufacturing principles with those of agility, taking full advantage of all three production strategies. Mass Customization differs with Lean Manufacturing and Synchronous Manufacturing in the sense that lean manufacturing is oriented toward a repetitive manufacturing environment with order characteristics of high-volume/low-mix, and synchronous manufacturing applies to low-volume/high mix.

Mass Customization is oriented toward high-volume/high mix, adding velocity and flexibility in the production process. It applies to environments where a large degree of customized, or specialized orders, offer a competitive advantage.

Mass Customization requires an agile supply chain to function optimally. Supply chain agility is the extent of network capability that the organization possesses. Key to the success of an agile supply chain is the speed and flexibility with which these activities can be accomplished and the realization that customer needs and customer satisfaction are the very reasons for the network.

Customer satisfaction is paramount. Achieving this capability requires all physical and logical events within the supply chain to be enacted swiftly, accurately, and effectively. The faster parts, information, and decisions flow through an organization, the faster it can respond to customer needs.

The benefits generally are specialization, high volume flexibility, lower costs, higher quality, lower inventory, and shorter lead times. The characteristics of mass production processes are:

Make to order High or low volumes Low inventories Short lead times Just-In-Time materials/pull scheduling in early stages Synchronized scheduling in later stages Short cycle times Highly flexible and responsive processes Highly flexible machines and equipment Quick changeover Continuous flow work cells Collocated machines, equipment, tools and people Compressed space Multi-skilled employees Empowered employees High first-pass yields with major reductions in defects

#### The Issues

Mass Customization is in direct opposition with traditional manufacturing approaches characterized by use of economic order quantities, high capacity utilization, and high inventory. It requires radical change. Excess capacity is welcome instead of taboo. Make-to-order capability replaces mass production and lot sizes based on EOQ's.

A major issue with Mass Customization is the high capitalization often required for flexibility in the production and assembly areas. However payback periods of 2 years or less are common.

However, just like anything else, Mass Customization is no panacea, nor should it be embraced as a religion. It is an operational strategy that, if implemented properly, will provide a new dimension to competing: quickly introducing new custom high quality products and delivering them with

unprecedented lead times, swift decisions, and manufacturing products with high velocity.

## Pragmatic Applications

Mass Customization is a combination of speed and flexibility that is difficult to achieve because it requires radical changes to traditional thinking. A broad front approach to implementation is likely to bog an organization down. We suggest a series of pilots following a master plan, taking a "grassfire" approach where continual pilot implementations over several years eventually result in a "blaze" of change.

## Our Approach: Tools from a Toolchest

Rockford Consulting Group applies concepts and technologies as the situation warrants, that will result in the ultimate benefit to our clients. We treat strategies, technologies, and methodologies as tools in a toolchest, and use them when they offer practical solutions and achievable results. We believe that each client situation is unique, with its own unique set of solutions. (Please see our mass customization consulting services Mass Customization Consulting Services )

## Why Us?

Rockford Consulting Group can provide long-term assistance to many companies in a variety of industries. The firm has a cadre of the best manufacturing, distribution, and supply chain consultants in the world today, providing high quality professionalism through the use of experience and innovation.

We subscribe to the Institute of Management Consultants Code of Professional Conduct. All consultants engaged on projects adhere to its principles. Whenever possible we will use consultants certified in their particular specialty area. Certification assures that consultants have substantial prior experience in their specialty, and their competencies have been tested by the IMC, and verified by a number of clients. This assures our clients that we are assigning the highest qualified consultants in the profession.

We provide technical expertise, team facilitation, leadership, and direction in deciding how you will meet the challenge. We refer you to our Qualification Statement for further details on our background, areas of specialization, concepts and technologies applied, staffing, operating policy, approach, companies and industries served, case studies and references. Equally as important, we train our clients to sustain new methods of manufacturing and the consequential benefits over time. Your company will benefit directly from this training.

We have achieved an efficiency in our approach to assignments that allows us to provide high quality technical and managerial advice in a much shorter amount of time than could be accomplished years ago. We are able to do this because of the extensive consulting experience that each of our specialists has.

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