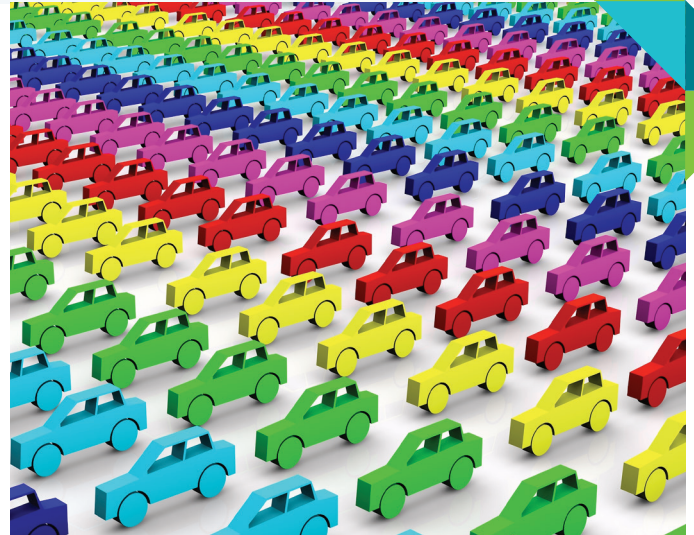# MASS CUSTOMIZATION
Is your business ready for this?

Mass customization holds out major promise for creating new business opportunities, improving cash flow, and reducing waste.

The prospect of mass customization has been like the end of a rainbow; no matter how many steps we take towards it, it is always in the distance.

Since Henry Ford's assembly line, factories have been geared towards the goal of mass production - the production of large amounts of standardized products. The reasoning behind mass production is that you need economies of scale in order to produce goods at a reasonable price; the upfront costs of starting manufacturing can only be covered by making products in very large quantities.

Now, with new technology advances, it seems that the era of mass customization is about to dawn. According to the APICS definition [<1>], mass customization combines "**the low unit cost of mass production processes with the flexibility of individual customization.**" Simply put products are adapted to customers' individual needs.

Mass customization seemed to be almost an impossible goal, and some early attempts ended in failure, e.g., Levi Strauss manufacturing customized jeans. It was easy to customize for small quantities and with high prices, but a major stumbling block was making the process work profitably at scale and with competitive prices.

Technology for mass customization

The new or improved technologies that have made mass customization a reality are:

- online configuration technologies and 3-D modeling that let customers design and envision the product before it is made;
- software to make pricing 'smarter', which helps to regulate what customers choose and when;
- improvements in enterprise software that enable customized features to be ordered, then translated into inventory, procurement and production instructions, and tracked through the entire process;
- flexible production systems: automated production and 3-D printing (additive manufacturing) which can make small batch production more profitable;
- growth of the Internet of Things: the introduction of sensors into parts that will offer the potential of greater visibility, flexibility and control of goods flowing through production and supply chains. [<2>]

Business for mass customization

However, questions about mass customization persist: Are customers willing to embrace and pay for it? Furthermore, can businesses make the necessary changes to enable mass customization?

There are three areas that businesses need to address to support mass customization. [<3>]

1. Identify the parts of the product that will be customized. Not every aspect of a product can or should be customized, and companies need to find out what customers need most to be customizable.

2. Make the necessary change to the organization. Mass customization will require new processes and structures, for example:

   ▪ Investment in a different production environment

   ▪ Marketing focusing on different customer requirements and values

   ▪ New accounting procedures to support new costing

   ▪ A design culture that engages new product development approaches

   ▪ Change to procurement and supply chain processes

3. Help customers do the customization. Customers need to have a process with minimal complexity that enables them to select the appropriate customization without overwhelming them with too many options.

Mass customization holds out major promise for creating new business opportunities, improving cash flow, and reducing waste. While previous attempts have failed, there is evidence to support the view that it is at last a viable option for manufacturers. While the technology is emerging to make mass customization possible, it will require some radical changes in the way businesses operate if it is to succeed this time.

1. APICS Operations Management Book of Knowledge, Third edition
2. McKinsey Insights, February 2014: How technology can drive the next wave of mass customization
3. MIT Sloan Management Review, Spring 2009: Cracking the code of mass customization

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