Module #1
What is Mass customization?
As defined by wikipedia.
http://en.wikipedia.org/wiki/Mass_customization

Mass customization, in marketing, manufacturing, and management, is the use of flexible computer-aided manufacturing systems to produce custom output. Those systems combine the low unit costs of mass production processes with the flexibility of individual customization.

The concept of mass customization is attributed to Stan Davis in Future Perfect [1] and was defined by Tseng and Jiao (2001, p. 685) as "producing goods and services to meet individual customer's needs with near mass production efficiency". Kaplan and Haenlein (2006, pp. 168–182) concurred, calling it "a strategy that creates value by some form of company–customer interaction at the fabrication / assembly stage of the operations level to create customized products with production cost and monetary price similar to those of mass-produced products".

Letting Consumers Design Their Own Experiences: Case for the Mass Customization Model - By Ted Mininni
A few years ago, Burger King ran a very successful campaign. “Have it Your Way” resonated with customers since the fast food giant enabled them to order customized sandwiches to their liking. For Burger King, this was a clear point of differentiation from its competitors; one that it could exploit to solidify its brand identity in the consumer’s mind.

While few companies have embraced mass customization as an integral part of their brand identities, technology and the Internet have made this possible more than ever before, so the concept has great possibilities. Companies are increasingly beginning to explore its potential since it has the power to do great things, provided a well-executed overall strategy, business model and logistics are all in place. Marketer and author, B. Joseph Pine, in a recent Business Week interview, predicted that given some time, he expects upward of 50% of companies to offer mass customization services to their customers. An early proponent of mass customization, Pine has researched and written much on this topic since the early 1990’s.

Of course mass customization is suited to some industries and companies better than others. Businesses should not even consider this venture
unless their resources, human and otherwise, are set up in a business model that is conducive to it, and they have invested time, effort and capital in setting it up properly or else it will likely fail. Nor do companies that offer mass customization services have to forsake offering standardized products and services; they can integrate both.

Why should companies consider setting up this model now, or moving to it? Consumers are slowly, but surely, taking the reins in regard to fashioning their own experiences with brands. Joseph Pine has described mass customization as a niche for companies to become part of the new “experience economy”. Customization enables consumers to become participants in designing their own products or services. Since so many customers enjoy the process of consumption, it could be argued that they derive even greater pleasure and value from customizing their own products. The implication is that mass customized brands are then experienced at a very profound level.

Today’s youth are accustomed to personalizing their own experiences, from the Internet to their mobile phones. They are customizing their toys, games and even their clothing. Some of the hottest kids’ brands include myTego, American Girl Place and Build-a-Bear for that very reason. With new generations of young consumers who are accustomed to, and demand the gamut from personalization to mass customization from their brands, is there any doubt that as adults, they will expect the same?

As companies engage in consumer research, they are finding out that their customers are increasingly making unique and less predictable demands on products and services, thus making it more challenging to meet their diverse needs and desires. Part of customer fulfillment may include finding ways large and small to allow consumers to customize products to conform to their needs and personal preferences. This enables every company that becomes a mass customizer to handle specialized requests on a large scale. By making the customer part of the finished product design process, great perception of added value can develop, especially if that process is seamless, well designed and well managed.

Several factors have come together to create more impetus for considering mass customization now. Firstly, ready-made products and services have less appeal to customers than ever. Many consumers are becoming niche buyers within categories, making ready-made products less and less appropriate for the very “masses” that mass production was created for. It’s also becoming much more challenging to gauge customer demand, preferences and articulated specifications in this time of myriad marketplace choices and accelerated, shorter consumer product cycles.

Secondly, globalization has brought on greater competitive pressure in a relatively short period of time for many companies. Category saturation and commoditization are accelerating. National boundaries have blurred; every company that has an Internet site has a potentially global presence. Large corporations have staked future growth on their ability to establish their brands in developing markets. Trying to impose a “one size fits all” mentality in numerous markets and for so many segments within markets, is
probably not the answer to long-term success. The Internet makes it possible, for companies large and small, to offer standardized and customized products and services compatibly, or to merely offer the latter.

Thirdly, there’s a substantive difference in trying to gauge consumer needs and desires through marketing questionnaires or focus groups and actual order fulfillment. Some consumer needs and wants may be articulated through pre-product development research. Then again, they may not.

For companies that offer customization services, customers’ actual orders bring forth actual data on consumer preferences, and some of those may have gone unarticulated through prior research simply because the customer didn’t consider specific options beforehand, or they didn’t know they wanted a particular component or feature until they saw that it was available. Also: pre-marketing research can be tainted by panel and questionnaire biases, making them less reliable than one-on-one company-customer interface.

Fourthly, top line growth and bottom line profits are a major concern. Premium pricing afforded by mass customization can and should lead to more profitability if the customer order fulfillment network is efficient, responsive and highly adaptable. Crucially important, too, is the effective flow of communication among company employees, throughout the supply chain and with the customer. Mass customization brings this to the fore.

Lastly, more flexibility and rapid response time to changing marketplace needs and demands are absolute “musts” for long-term sustainability. Being closer to the customer, and getting a constantly updated pulse on marketplace trends, yield great rewards. Mass customization, by its very nature, is extremely flexible. Companies that offer customization services can continually reconfigure their networks to turn products around smarter, faster and more profitably than their competitors. They can position themselves to utilize the expertise of suppliers and input from customers to bring the new product or service components the consumer is looking for to market before their competitors can. Speed, heightened responsiveness and continuous adaptability make it much more difficult for competitors to copy and commoditize the customizing company’s products.

**How Mass Customization Works.**

Organizationaly, companies that specialize in mass customization should be set up as network structures. That is, all of the resource units within such a company must be loosely paired. These units can be comprised of company personnel, teams, industry-specific software, back office processes and/or manufacturing equipment, depending upon the company, its resources and its industry sector. Compare this to mass producers that are set up as pre-aligned, pre-engineered business models offering specific, manufactured products by employing fixed, stable assembly lines. In the customization model, all material and information flows have to be flexible, and organized in modular units.
Network structures are very flexible by nature. They permit the flow of materials and services, as needed, between company units, making it possible to produce a wide variety of end products for customers at efficient, cost-effective levels. By changing internal processes, mass customization is possible. By partnering with great resource providers in the supply chain, and setting up a generalized production line, reconfiguration should be flexible and fast in response to changing customer needs, by only making slight modifications to the basic line. It should be cost effective and it will be if company resources are set up to be continually reconfigured.

Network structures have to operate seamlessly to be highly efficient. A system has to be developed whereby information flows quickly from customer to order taker, suppliers, internal personnel, work teams, production capabilities and back to the customer. Obviously, with such a fluid network, efficient operations and effective communication flow, the relationships between company resources and teams can and should be very dynamic. A system that is set up to be continually reconfigured, should cause very little, if any, internal friction.

Key for companies is the capability of customizing products for each customer by utilizing mass components that can be configured into numerous finished products, and tailoring the end products with efficiencies that approximate mass production. The way to accomplish this is through modularity. By keeping an inventory of interchangeable, modular elements on hand, customers can select the specific options they need or prefer and companies can assemble them quite efficiently.

A high level of customer interaction is critical in the mass customization model. Companies have to be prepared to engage in ongoing communication and customer service. While this is important for every company, it is even more crucial for mass customizers. For this to work from the customers’ standpoint, a number of criteria must be met. There has to be good communication, expertise in answering questions and fielding problems to customers’ satisfaction. Enough choices must be available within each component group, without an overwhelming number of options, so that customers can design the niche products that really “fit the bill” for them.

While premium pricing is expected and perceived to be “worth it” to the customer, there has to be efficient order fulfillment within a reasonable time frame, or the value perception warranting higher pricing diminishes dramatically if this process takes too long, according to the findings of The Customization Experts Project, funded by the EU through the Leonardo da Vinci Programme.

121Time Swiss Watches presents a great example of a mass customizer with a well-designed Internet site, www.121time.com. Consumers can go to the web site and select very casual, business and elegant watch styles and then customize every component of the basic style they choose: movement, case, bezel, dial and hands, crown and strap. Customers can also build watches from scratch rather than pre-selecting and customizing a specific model.
121Time also invites customers to further personalize their timepieces with symbol and text engraving and upgrades; all easily selected from menus. Lastly, wrist sizes can be noted so that the customer’s watch is truly customized in every respect.

As changes occur due to new technology, innovation or fashion demands in the marketplace, engineers and designers must respond with new modular components that are compatible. New design software, network teams and strong supply chain relationships make it possible to continue to update and upgrade components to give customers the features they truly want.

Apparel, as well as functional, high-end athletic footwear also responds to fashion trends, new design and innovation. NikeiD® furnishes a great example of mass customized products that are subject to these changes. A trip to the NikeiD® web site, www.nikeid.com, offers customers an interesting, easily navigable experience. Consumers select a basic athletic shoe in plain white or in one of the pre-set color palettes, and customize their selection by making their own color choices and names, favorite icons, or player numbers if they wear them as members of sports teams. While costing about the same or a bit more than athletic shoes purchased in a store, consumers are accustomed to paying premium prices for highly supportive cross trainers, running, basketball, soccer or track and field shoes. Paying for, and getting, shoes designed to customers’ own specs is pretty gratifying; they can truly say they designed their own athletic footwear. Note that Nike has been, and continues to be, in the business of offering standardized athletic footwear, but the company has now added a site that allows consumers to design shoes to their own specifications. Proof that established companies with standardized products and services can compatibly add a customized business component to their businesses, as well.

**The Upside of Mass Customization.**

What kinds of rewards can be reaped for companies that offer mass customization services? For one thing, these companies can gain a competitive edge and significant differentiation from their competitors.

Some consumer product companies have leveraged mass customization and made it integral to their overall brands. Dell has always been considered a prime example since the company’s business model has always been based on mass customization. The company is available to its customers 24/7 to answer questions and enable them to order the components they want and need in their personal computers. The technology giant has always configured computers to the specifications of each customer who buys directly from them, if they prefer to take that route rather than purchasing stock models directly from the company, or in electronics outlets. Tech support is, likewise, available 24/7 for Dell customers. Although there have been a few notable glitches recently, Dell has always provided exceptional customer service.

While Dell has had its challenges of late, including increased competition and falling PC prices, the company is retooling itself since Michael Dell returned to the helm in January 2007. The company is pushing the
innovation envelope, and exploring new markets. As it reorganizes, Dell continues to sell mass customized PCs directly to its customers, and expects to regain its dominance in the marketplace.

Mass customization can be utilized as a powerful tool to drive customer brand loyalty. Customers who stroll into Starbucks can order coffee drinks in myriad ways from their local baristas. Added to this is the experience Starbucks delivers to its customers within uniquely designed environments. In a recent Business Week interview, Robyn Waters, trend watcher and former vice-president of Trend, Design, and Product Development at Target, claimed: “There are purported to be over 19,000 ways to order your coffee drink at Starbucks.” There can be no doubt that Starbucks aficionados are accustomed to having their favorite java concoctions customized to their taste, and this factor along with consistently great experiences, has made Starbucks’ customers incredibly loyal.

It can even be argued that Starbucks’ devotees have transcended mere brand loyalty to become true brand advocates. With more competition on the horizon, and the growth of cash-infused, expansion-minded Dunkin’ Donuts, Tim Hortons and even McDonald’s which have all seen increased volume in their coffee businesses, Starbucks must continue to deliver what its customers expect: a highly customized product with many more choices, within a uniquely crafted environment. There also has to be a perception of greater brand value for Starbucks’ patrons to continue to pay higher prices there than at its competitors’ stores.

Offering the high level of service and “uniquely designed products” implied by mass customization, allows companies to command premium prices. When the consumer is part of the process, a greater perception of value and enjoyment further cements customer to brand. While not custom-made in the traditional sense, mass customization enables consumers to have products tailor-made to fit their needs and desires, hence these kinds of products are less price-sensitive. Customers expect to pay more for customization, provided quality, customer service thresholds, and as cited previously, efficient order delivery are met or exceeded in their view. In fact, many consumers will spend more if they are part of the process and have options. Moreover, adding to the consumer’s overall experience in a deeply satisfying way is the greatest value any brand can deliver. How much is that worth?

Customization allows mass producers to service customers in niche markets; something that their competitors are not able to do if they mass produce products without offering customization services. Due to the tremendous amount of segmentation in today’s markets, being able to offer perceived niche products, and products that solve specific problems, is a great advantage.

Service Providers as Mass Customizers.

While many consider mass customization to be the bastion of consumer product companies, service providers can and do offer customized services for their customers, as well. Citibank, for example, enhanced its Internet site in 2002 in order to provide easy navigation and access for consumers,
as well as small business and corporate customers. Citibank provides information and access to its numerous retail banking and financial services, enabling all of its customers to set up a customized home page, dubbed My Citi, based on their personal preferences and needs. In this way, consumers, private and business customers both, can set up their “home pages” with the content they really need, and in a layout that works best for them.

At Citibank’s Internet site, customers can review their Citi card and bank account activity and see their balances, make express payments, pay bills, transfer funds, view online statements, receive wireless and e-mail alerts, and receive information about exclusive offers for Internet customers. They can also apply for lines of credits and loans and access Smith Barney and Cititrade® services, where they can review their brokerage accounts, buy and sell securities, screen stocks, conduct research and do financial planning. The ability for private and business customers to have access to up-to-date information on their credit card and bank accounts, as well as their portfolios is a great service.

While a staggering breadth and depth of services are available at a large financial institution like Citi, they have been humanized, made more accessible and more personalized by the corporate giant’s Internet site. With individual home pages set up to access only the information and services they truly want and need, Citibank has succeeded in offering mass customization services to its customers on a very large scale.

Likewise, stock brokerage Schwab has found a way to offer both online and off-line services and integrate operations. Due to the significant investment Schwab has made in electronic and technological innovation, online brokerage services have become the preference for a large percentage of its investor clients. Unlike some online discount brokers, Schwab clients can get information or assistance via a phone call or a visit to a local branch office, as well.

Because Schwab has made IT a focus in its organization, the brokerage has been able to offer services in anticipation of marketplace demand in a consistent manner. Flexibility and dynamic networks have been put in place because Schwab is catering to a variety of investors. By offering a full menu of financial services online, great accessibility to the markets and customized investment advisory services at relatively low cost, Schwab has become a powerful mass customizer for investors.

By offering personalized services at competitive prices, Schwab has been able to position itself as differentiated from high end brokers and deeply discounted brokers alike. Schwab offers “one-on-one investment guidance for all” enabling the firm to customize its many services and offerings for each client. The web site also offers assistance to manage client portfolios, or assist in the management of them.

More and more service organizations, from banks and financial institutions, brokerages and insurance companies are customizing and diversifying their offerings for their customers, and making the back
office processes as easy and painless as possible to facilitate these operations.

**Designing the Experience.**

The Internet has made so much possible for companies that want to provide a mix of standardized products and services as well as full mass customization as Dell has done. Or, to become fully customized in their offerings as 121Time Swiss Watches has done. As is the case with most business models that are conceptually new, there will be struggles and failures among some of the companies that set themselves up as mass customizers. For other companies, adjustments will be made along the learning curve, and modifications to their models; or additional flexibility and adaptability will be built into their networks over time.

There will also be notable successes like Dell, Citibank and Build-A-Bear, but as business leaders know, even strong, well-run companies are not immune from making mistakes, contending with slow-downs and even reversals. In spite of this, it is inevitable that entrepreneurs and established companies will likely increasingly experiment with this model in numerous sectors and some will become thriving businesses. Mass customization need not be the province of corporate behemoths, either; small companies are being launched using this model every day.

While many companies and their brands provide their customers with consistently positive experiences—few transcend their categories to become powerfully differentiated leaders. Mass customization is one consideration for companies that wish to provide very personal service and potentially deeply satisfying experiences to their customers. When customers become part of the process in designing their own products or services, they also design their overall experiences with the brand in question. They have done more than touch the brand; they have made the brand an integral part of themselves, experiencing it on a very deep level.

The companies that become leaders in connecting with the customer in this new “experience economy” in such a profound manner can achieve deep customer loyalty as well as true sustainability. And that is the ultimate goal of every business.

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**Ted Mininni** is president of Design Force, Inc., www.designforceinc.com, a brand identity and package design consultancy. He can be contacted at tmininni@designforceinc.com.
Manufacturing Case Study: Left® Custom made shoes

(https://shop.leftfootcompany.com)

The Left® Shoe company is a good example of a manufacturer who supplies their customers with a product, and also delivers a service because of process. The company provides custom footwear over the internet. The process begins with a detailed scan of the client’s feet. This must take place at a participating dealer, currently only available in Europe and Asia. Once the details and measurements of the client’s feet are entered into the system, the customer can specify desired shoe design, color, leather type, outsole and lining via the website. The shoe is made to order, and the customer’s “signature”, name and customer #, are imprinted into the right shoe. The custom-made shoes ship 3-weeks from time of order.

-- Excerpts from the Financial Times Published: March 7 2007. The shoe that is sure to fit By Peter Marsh.

Mr. Fonsen runs Pomarfin, a Finland-based shoe producer that is setting up a new line of business offering customized footwear over the internet.

Mr. Fonsen’s vision is intriguing. In his plan, shoe shops around the world purchase or rent specialized scanners to measure customers’ feet with great accuracy. The details are passed to Pomarfin’s headquarters in Pomarkku, Finland, then sent to the company’s main shoe factory in Estonia where the footwear is made to specification.

Once a person’s details are on file, any further orders are made according to their personal measurements.

"It would be too expensive to make each shoe as a one-off completely from new," Mr. Fonsen says. "So we have found a way to put together the shoe reasonably cost-effectively from a number of basic building blocks in an example of ‘mass customization’. The customer benefits from getting something that is made just for him."
What would a Mass Customization future look like?

The end user, or purchaser of goods, would be included at the inceptions phase of an object. A consumer’s specific personal demands instigate production. The designer would listen to the wants, needs and desires of the consumer and then articulate exactly the design to the manufacturer. The designer’s skills add value to concept and leads to realization. The manufacturer’s adds value by processing raw materials into finished goods. Raw goods can remain in a state of flexibility, and are only processed on demand, reducing waste and redundant overhead costs.

The ability to exchange large quantities of information efficiently and quickly through technology allows these processes to take place and reduce the traditional barriers of entry into the marketplace. Bruce Sterling and Scott Klinker additionally have envisioned a future where technology can tracks objects called “spimes” from birth to recycling, or cradle-to-cradle, production. View this video online.

http://www.toshare.it/spime